



THE GEORGE WASHINGTON UNIVERSITY BULLETIN



UNDERGRADUATE  
AND  
GRADUATE  
CATALOGUE



1967-1968



## CORRESPONDENCE DIRECTORY

Detailed information may be obtained by addressing inquiries as indicated below. For any information not included here, please write to the Office of Admissions. Mailing address for all University offices unless otherwise indicated is The George Washington University, Washington, D. C. 20006.

Information concerning courses of instruction, programs, and faculties of the several colleges and schools will be found in separate issues of the University Bulletin, which are listed on page 436. Zip code is essential for mailing catalogues.

Admission.....Office of Admissions  
Law (LL.B. degree).....Dean of The National Law Center  
School of Medicine.....1331 H Street, Washington, D. C. 20005  
Alumni Association.....Alumni Office  
Medical Alumni Association.....1331 H Street, Washington, D. C. 20005  
Financial Aid.....Student Financial Aid Office  
Foreign Students.....Adviser to International Students  
Gifts and Bequests.....Resources Programs

### Graduate Study

In Arts and Sciences.....Dean of The Graduate School of Arts and Sciences  
In Education.....Dean of The School of Education  
In Engineering and Applied Science.....Dean of The School of Engineering  
and Applied Science  
In Law.....Dean of The National Law Center  
In Accounting, Business Administration, Business and Economic Statistics, Health Care Administration, International Business, Personnel Administration, Public Administration, Urban and Regional Planning  
Dean of The School of Government and Business Administration  
In International Affairs and Public Affairs.....Dean of  
The School of Public and International Affairs

### Housing

Men.....Dean of Men  
Women.....Dean of Women  
Off-Campus and Noncredit Courses.....Dean of The College of General Studies  
Student Employment.....Student Placement Office  
Summer Sessions.....Dean of The Summer Sessions  
Transcripts of Records.....Registrar  
Veterans Education.....Director of Veterans Education

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THE GEORGE WASHINGTON UNIVERSITY BULLETIN  
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**THE GEORGE WASHINGTON UNIVERSITY BULLETIN**

**UNDERGRADUATE AND  
GRADUATE CATALOGUE 1967-68**

**Arts and Sciences, Education,  
Government and Business Administration,  
Public and International Affairs**

WASHINGTON, D.C. 20006





This undergraduate and graduate catalogue lists the programs, courses, and faculties of Columbian College of Arts and Sciences; the Graduate School of Arts and Sciences; the School of Education; the School of Government and Business Administration; and the School of Public and International Affairs.

It also contains information on the Division of University Students. In this Division are registered students who wish to take University courses for credit or as auditors but are not pursuing degree programs.

For information concerning the University's programs and faculties in Engineering and Applied Science, Law, and Medicine, request the appropriate catalogue. See "Annual Issues of the University Bulletin," page 436.



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# THE UNIVERSITY CALENDAR

1967-68

## 1967 FALL SEMESTER

- September 8* Placement tests and advising for entering freshmen who did not attend Summer Advance Registration sessions *Friday*
- September 9* Advising *Saturday*
- September 11* Advising of transfer students *Monday*
- September 11* Placement tests *Monday*
- September 11* Orientation Assembly required of all new students *Monday*
- September 11* University Faculty Assembly Meeting *Monday*
- September 12-13* Registration: *Tuesday-Wednesday*  
Application for February graduation due as a part of registration
- September 14* Classes begin *Thursday*
- September 29* Subjects of Master's Theses of February candidates due *Friday*
- October 7* National Teacher Examinations *Saturday*
- October 7* Application for November Ed.D. Comprehensive Examinations due *Saturday*
- October 19* Board of Trustees Meeting *Thursday*
- November 4* Ed.D. Comprehensive Examinations *Saturday*
- November 10* Veterans Day (holiday) *Friday*
- November 22* Thanksgiving Recess begins after last class *Wednesday*
- November 27* Classes resume *Monday*
- December 1* Doctoral Dissertations of February candidates due *Friday*
- December 12* Application for January Ed.D. and A.M. in Ed. Comprehensive Examinations due *Tuesday*
- December 15-16* International Affairs and Public Affairs Master's Comprehensive Examinations *Friday-Saturday*
- December 16* Christmas Recess begins after last class *Saturday*
- January 3* Classes resume *Wednesday*
- January 3* Master's Theses of February candidates due *Wednesday*



<i>January 6</i>	National Teacher Examinations <i>Saturday</i>
<i>January 6</i>	Ed.D. and A.M. in Ed. Comprehensive Examinations <i>Saturday</i>
<i>January 10</i>	Last day of Fall-semester Classes <i>Wednesday</i>
<i>January 13-20</i>	Examination Period <i>Saturday-Saturday</i>

**1968 SPRING SEMESTER**

<i>January 15-24</i>	Advising for freshmen, sophomores, and all new students <i>Monday-Wednesday</i>
<i>January 18</i>	Board of Trustees Meeting <i>Thursday</i>
<i>January 22</i>	Placement Tests <i>Monday</i>
<i>*January 25-27</i>	Registration: <i>Thursday-Saturday</i>
<i>January 29</i>	Spring Semester Classes begin <i>Monday</i>
<i>February 2</i>	Subjects of Master's Theses of June candidates due <i>Friday</i>
<i>February 6</i>	University Faculty Assembly Meeting <i>Tuesday</i>
<i>February 22</i>	Winter Convocation (holiday) <i>Thursday</i>
<i>March 21</i>	Board of Trustees Meeting <i>Thursday</i>
<i>March 23</i>	Application for April Ed.D. and A.M. in Ed. Comprehensive Examinations due <i>Saturday</i>
<i>March 23</i>	National Teacher Examinations <i>Saturday</i>
<i>April 1</i>	Doctoral Dissertations of June candidates due <i>Monday</i>
<i>April 6</i>	Spring Recess begins after last class <i>Saturday</i>
<i>April 16</i>	Classes resume <i>Tuesday</i>
<i>April 19-20</i>	International Affairs and Public Affairs Master's Comprehensive Examinations <i>Friday-Saturday</i>
<i>April 20</i>	Ed.D. and A.M. in Ed. Comprehensive Examinations <i>Saturday</i>
<i>April 26</i>	Master's Theses of June candidates due <i>Friday</i>
<i>May 15</i>	Last day of Spring-semester Classes <i>Wednesday</i>
<i>May 16</i>	Board of Trustees Annual Meeting <i>Thursday</i>
<i>May 18-25</i>	Examination period <i>Saturday-Saturday</i>
<i>May 30</i>	Memorial Day (holiday) <i>Thursday</i>
<i>June 2</i>	Baccalaureate Service <i>Sunday</i>
<i>June 2</i>	Commencement <i>Sunday</i>

**1968 SUMMER SESSIONS†****1968 FALL SEMESTER**

<i>September 17-18</i>	Registration: <i>Tuesday-Wednesday</i>
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\* Registration is conducted alphabetically according to the first letter of the student's surname. The alphabetical breakdown and the hours of registration will be stated in the *Schedule of Classes* which is available well in advance of each semester.

† Dates will be announced in the Calendar of the 1968 Summer Sessions Catalogue published in December 1967.



## THE UNIVERSITY

### HISTORY

THE GEORGE WASHINGTON UNIVERSITY had its beginning in 1821 as The Columbian College in the District of Columbia. The name of the institution was changed in 1873 to Columbian University and in 1904 to The George Washington University. The debt of the University to George Washington, whose name it bears, is an intangible one.

George Washington, as President and as private citizen, had urgently insisted upon the establishment of a National University in the Federal City. There he hoped that, while being instructed in the arts and sciences, students from all parts of the country would acquire the habits of good citizenship, throwing off local prejudices and gaining at first hand a knowledge of the practice, as well as the theory, of republican government. To further the materialization of his hopes, Washington left a bequest of fifty shares of The Potomac Company "towards the endowment of a University to be established within the limits of the District of Columbia, under the auspices of the General Government, if that government should incline to extend a fostering hand towards it." The Congress never extended "a fostering hand." The Potomac Company passed out of existence, and Washington's bequest became worthless.

Fully conscious of Washington's hopes, but motivated primarily by a great missionary urge and the need for a learned clergy, a group of dedicated ministers and laymen sponsored a movement for the establishment of a college in the District of Columbia. Inspired largely by the zeal and energy of the Reverend Luther Rice, they raised funds for the purchase of a site and petitioned Congress for a charter. After much delay and amendment, Congress granted a charter which was approved by President Monroe on February 9, 1821. To safeguard the College's nonsectarian character it provided "That persons of every religious denomination shall be capable of being elected Trustees; nor shall any person, either as President, Professor, Tutor or pupil, be refused admittance into said College, or denied any of the privileges, immunities, or advantages therefore, for or on account of his sentiments in matters of religion."

During the entire time when the institution was known as Columbian College, its activities were centered on College Hill, a tract of forty-six and a half acres between the present Fourteenth and Fifteenth Streets extending north from Florida Avenue to somewhat beyond Columbia Road. The Medical School was located downtown. For the better part of the Columbian University period,



the buildings of the University were situated along H Street between Thirteenth and Fifteenth Streets. The Medical School group still remains there.

During the last half century the University's present plant has been developed in that section of the old First Ward familiarly known as "Foggy Bottom," between Nineteenth and Twenty-fourth Streets, south of Pennsylvania Avenue. The area is not without its reminders of historic interest to the University. President Monroe, who signed the Charter, lived at 2017 Eye Street. The first President of the Board of Trustees, the Reverend Obadiah B. Brown, was for fifty years the pastor of a church at Nineteenth and Eye Streets, and Washington selected Twenty-third and E Streets as the site of the National University he had hoped to see established.

#### PURPOSE AND OBJECTIVES

The purpose of The George Washington University was to realize "the aspirations of Washington, Jefferson, and Madison, for the erection of a university at the seat of the Federal Government." Over the years it has been the aim to develop the University ideal in the Nation's Capital with a view toward meeting the changing needs of society while continuing to pursue the traditional principles of learning and research.

The George Washington University now rededicates itself and all the resources at its command to the pursuit of knowledge and its dissemination.

To this end:

The University recognizes its special opportunities in and obligations to one of the principal capitals of the world. It is a primary objective of the University to utilize its historical, geographical, and functional relationship to the Nation's Capital and the Washington community in continuing the development of a great nationally and internationally oriented university.

The University recognizes the needs of our times and accepts the challenge to develop each student's potential abilities to the fullest extent.

The University is and should remain privately controlled, nonsectarian, and co-educational.

Admission to the University is determined only in terms of the personal character and academic qualifications of the candidates.

A broadly based liberal education is fundamental to the total program of the University.

Expansion of graduate and professional studies and research and the utilization for this purpose of the excellent research facilities and materials available in the Nation's Capital are basic to the continuous development of the University's educational program.

The provision of superior instruction and facilities and the application of high standards of entrance qualifications and academic achievement to all students whether full-time or part-time, on-campus or off-campus, are major missions of the University.

A balanced program of student extracurricular activities is an integral part of the University program.

The University will continue to strive to meet the evident needs of an enlarging student body while governing the size of enrollment by its capacity to supply adequate staff and facilities for the excellent teaching and research which it espouses.



## THE COLLEGES, SCHOOLS, AND DIVISIONS

The George Washington University includes eleven colleges, schools, and divisions, as follows:

*Columbian College of Arts and Sciences\**, through its lower and upper divisions, offers four-year programs in the arts and sciences leading to the degrees of Bachelor of Arts, Bachelor of Science, and (in cooperation with the Department of Pathology and the University Hospital) Bachelor of Science in Medical Technology. The lower division also provides the first two years of the prelegal and premedical programs; the preprofessional work required for admission to the School of Education, the School of Government and Business Administration, and the School of Public and International Affairs; and a two-year terminal Associate in Arts curriculum in Accounting.

*The Graduate School of Arts and Sciences\** offers advanced study and research leading to the degrees of Master of Arts, Master of Fine Arts, Master of Music, Master of Science, and Doctor of Philosophy.

*The School of Medicine\** offers work leading to the degree of Doctor of Medicine.

*The National Law Center* offers courses leading to the degrees of Bachelor of Laws, Master of Laws, Master of Comparative Law, and Doctor of Juridical Science; and special programs in Continuing Legal Education.

*The School of Engineering and Applied Science* offers courses leading to the degree of Bachelor of Science in the following areas: Civil Engineering, Electrical Engineering, Measurement Science, and Mechanical Engineering. Graduate programs lead to the degrees of Master of Science, Master of Engineering Administration, and Doctor of Science.

*The School of Education* offers undergraduate programs leading to the degrees of Bachelor of Arts in Education and Bachelor of Science in Physical Education; graduate studies leading to the degrees of Master of Arts in Education, Education Specialist, and Doctor of Education.

*The School of Government and Business Administration* offers undergraduate programs leading to the degree of Bachelor of Business Administration and graduate programs leading to the degrees of Master of Arts in Government, Master of Business Administration, Master of Public Administration; the Graduate Certificate in Health Care Administration; the degrees of Doctor of Business Administration and Doctor of Public Administration. The School also has academic jurisdiction over off-campus programs leading to the following degrees: Bachelor of Business Administration, Bachelor of Science in General Studies with concentrations in accounting and business administration, Master of Science in Business Administration, Master of Science in Financial Management, Master of Science in Governmental Administration, Master of Science in Personnel Administration, and Master of Science in Public Administration. The administration of these off-campus programs is handled by the College of General Studies.

*The School of Public and International Affairs* offers undergraduate programs leading to the degree of Bachelor of Arts and graduate programs leading to the Certificate of the Institute for Sino-Soviet Studies and the degree of

\* Columbian College of Arts and Sciences and the Graduate School of Arts and Sciences cooperate with the School of Medicine in offering the combined degrees of (1) Bachelor of Arts and Doctor of Medicine and (2) Master of Science and Doctor of Medicine.



Master of Arts. The School of Public and International Affairs has academic jurisdiction over the off-campus program leading to the degree of Master of Science in International Affairs, which is administered by the College of General Studies.

*The College of General Studies* supplements the adult education program of the University through campus and off-campus study; conferences, seminars, and special projects; and continuing education and noncredit programs. This College offers programs leading to the degrees of Bachelor of Science in General Studies with concentrations in history, mathematics, political science, and psychology; and Bachelor of Science in Geodetic and Cartographic Science. The College of General Studies also administers the off-campus programs over which the School of Government and Business Administration and the School of Public and International Affairs have academic jurisdiction.

*The Division of University Students* makes available courses for students not candidates for degrees in this University.

*The Summer Sessions.*

#### CONSORTIUM OF UNIVERSITIES OF THE WASHINGTON METROPOLITAN AREA, INC.

Five universities in Washington, D. C.—The American University, The Catholic University of America, *The George Washington University*, Georgetown University, and Howard University—have formed a Consortium through which they are coordinating the use of their respective graduate facilities. As the arrangement develops, the graduate student who is in an approved program leading to a graduate degree in any one of the universities will increasingly have the opportunity to select from the combined offerings of all five universities the particular courses which best meet his needs.

Participation is open to graduate students, full-time or part-time, working toward degrees at the Master's or Doctor's level. Degree programs in the following are presently excluded: Canon Law, Dentistry, Law, Medicine, Nursing, Social Work, and Theology. Similarly excluded are special courses, such as private instruction (as in music or art) or tutorial study, courses in preparation for passing the language requirement, and summer school courses.

Graduate students are encouraged to study the announcements of graduate programs of all five universities. In order to participate in the Consortium program the student must obtain the approval of his adviser. *A student may audit courses in another university, but may not take courses at another university that are available at his own.*

Registration forms and instructions are available from the registrar of the student's university. The student registers at his own university for all Consortium courses. He pays only to his own university its charges for graduate study.

Specific inquiries should be addressed to the Registrar.

#### ADMINISTRATIVE UNITS

The University maintains the following Administrative Units: Health Services, Veterans Education, the Reading Center, the Speech and Hearing Clinic, and the Psychological Clinic.



## RESEARCH PROGRAMS

Research programs sponsored by agencies of the Federal Government and by private foundations and industries are conducted. Cooperation between these programs and the various departments of instruction is as close as the nature and needs of the programs and departments will permit.

## ACADEMIC STATUS

The George Washington University is accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools.

The University is on the approved list of the American Association of University Women and is a member of the College Entrance Examination Board.

The National Law Center is a charter member of the Association of American Law Schools and is approved by the Section of Legal Education and Admissions to the Bar of the American Bar Association. The School of Medicine is a member of the Association of American Medical Colleges and is one of the medical colleges which have been continuously approved by the American Medical Association. Curricula of the School of Engineering and Applied Science in Civil, Electrical, and Mechanical Engineering are accredited by the Engineers' Council for Professional Development. The School of Education is a charter member of the American Association of Colleges for Teacher Education and is accredited by the National Council for Accreditation of Teacher Education. The School of Government and Business Administration has maintained full membership in the Middle Atlantic Association of Colleges of Business Administration since 1961. The Department of Chemistry is on the approved list of the American Chemical Society.

## LOCATION

The University is in downtown Washington four blocks west of the White House and east of the Potomac River with its extensive parkway. Readily accessible are many of the departments of the Government, including the Department of State, the Department of the Treasury, the Department of Justice, the Department of the Army, the Department of the Navy, the Department of the Interior, the Department of Agriculture, the Department of Commerce, and the Department of Labor, as well as the National Archives, the Capitol, the Library of Congress, the National Academy of Sciences, the Pan American Union, the National Geographic Society, the World Bank, the Brookings Institution, the National Gallery of Art, and the Corcoran Gallery of Art.

## GOVERNMENT

The University is privately endowed and is governed by self-perpetuating Board of Trustees of which the President of the University is an ex officio member. The members of the Board are named for a period of three years and are divided into three classes. The members of one class are elected at each annual meeting to fill the places of the members whose terms of office expire. Two members of each class are nominated by the Alumni Association.



### THE UNIVERSITY LIBRARY

The Library collections of the University are housed in the University Library, the general library of the University, and in the departmental libraries of law and medicine.

These collections contain approximately 435,900 volumes—329,000 in the University Library, 72,900 in the Law Library, and 34,000 in the Medical Library. Approximately 15,000 volumes a year are added to the Library's resources. Endowments, supplementing the University appropriation, provide books in the fields of American civilization, American literature, foreign service, history, public finance, and the social sciences; and gifts from many sources have enriched the collections. The Libraries currently receive 3,400 periodicals.

The special subject collections include the library of the Carnegie Endowment for International Peace, assembled during forty years of its activity in Washington and purchased by the University in 1950. The collection contains 50,000 bound volumes and 20,000 pamphlets in the fields of international law and relations, history, and economics.

Information concerning the use of the Libraries may be obtained at the Library service desks. A classified list on cards of selected recent acquisitions is available.

The Library is administered for the curricular, reference, and recreational needs and interests of the students. Instruction in the use of the library is given in the required English courses, and by the reference librarians. The Library endeavors to assist students and all members of the University to use the rich library resources of Washington and the unusual opportunities they offer for extensive research. Interlibrary loan arrangements are maintained with other libraries in the city and in the United States.

The student has access to the Library of Congress, the Public Library of the District of Columbia and its branches, the libraries of the Pan American Union, the Bureau of Railway Economics, the U. S. Department of Agriculture, the Smithsonian Institution, the National Library of Medicine, and many of the other great special collections of the government departments.

The hours of the University Library are Monday through Friday, 8:30 a.m. to 10:00 p.m.; Saturday, 9:00 a.m. to 5:00 p.m.; Sunday, 2:00 to 10:00 p.m. The Law Library is open Monday through Friday, 9:00 a.m. to 12:00 midnight; Saturday, 9:00 a.m. to 5:00 p.m.; and Sunday, 2:00 to 10:00 p.m. The Medical Library is open Monday through Friday, 8:30 a.m. to 10:00 p.m.; Saturday, 8:30 a.m. to 5:00 p.m.; Sunday, 12:00 to 5:00 p.m.





## ADMISSION

THE UNIVERSITY ACCEPTS BOTH MEN AND WOMEN. Students are admitted at the beginning of each semester and summer session.

The right is reserved to refuse admission to any student with an academic record which creates doubt of his ability to succeed in college or who, for any other reason, would not be an acceptable student.

### APPLICATION FOR ADMISSION OR READMISSION

Forms for application for admission or readmission are available at and should be returned to the Office of Admissions, 2029 G Street, N.W., Washington, D. C. 20006. The application for admission to degree candidacy should be accompanied by a \$25 application fee\*. Application for admission to *non-degree status* in the Division of University Students† should be received, with credentials when required, no later than the Friday before the first day of registration (see Calendar, pages 7-8). No application fee is charged for admission to this Division.

Records presented become the property of the University and *cannot* be returned.

### STUDENTS FROM U. S. INSTITUTIONS

Applicants for degree candidacy are urged to submit the application form and complete credentials well in advance of the semester for which they seek admission.

### SECONDARY SCHOOL STUDENTS

#### REGULAR ADMISSION

Students for regular admission who wish to begin college in the fall semester *should* apply during the fall term of the senior high school year, *and* no later

\* Application fee must be by check or postal money order, payable to The George Washington University. The application fee is waived for a student applying for readmission who has previously been admitted to degree candidacy.

† Registration in a given course may be denied students in this Division when space is needed for degree candidates.



than March 1. Students graduating at mid-term wishing to begin college in the spring semester *must* apply no later than December 1. Applications and all required credentials of students wishing to begin college in either the first or second term of the summer session *must* be received prior to March 1.

*An applicant from a secondary school must send the high school record form provided by the University to his high school principal, with the request that the completed form be mailed directly to the Office of Admissions.*

#### EARLY DECISION PLAN

For the qualified student who wants to begin college in the fall semester and receive an early guarantee of space, the University offers an early decision plan. The student need *only* indicate on the application form that he wishes an early decision and have all required credentials in the Office of Admissions prior to November 1. A decision will be mailed by December 15. The declaration of intent to attend the University and a \$200 tuition deposit (plus an additional \$200 housing deposit for resident students), nonrefundable, *must be submitted by January 15 to reserve space.*

If the applicant is accepted under the early decision plan but fails to submit the deposit by January 15, he will be considered as for regular admission, as described above.

#### TRANSFER AND GRADUATE STUDENTS

Undergraduate transfer students from other institutions, and applicants for graduate programs *must* submit application and required credentials prior to June 1 for the fall semester, December 1 for the spring semester, May 1 for the first summer session, and June 1 for the second summer session.

The transfer student must be in good standing as to scholarship and conduct. He must be eligible to return to the last previously attended institution in the semester for which he seeks admission to this University.

An applicant who has attended one or more institutions of higher learning must request *each* registrar to mail directly to the Office of Admissions a transcript of his record, *even though credits were not earned.*

If high school units are not shown on the college transcript, the undergraduate applicant should request his high school to submit a transcript to the Office of Admissions.

If an undergraduate applicant has fewer than 60 semester hours of acceptable work (C or better on academic work from an accredited institution), he must request that his high school record and College Entrance Examination Board Test scores be sent to the Office of Admissions.

#### STUDENTS FROM FOREIGN INSTITUTIONS

Application, required records, and scores on the *Test of English as a Foreign Language* (see page 17) must be received from *foreign applicants* no later than March 1 for the fall semester and November 1 for the spring semester.



## REQUIRED RECORDS

Applicants must request all educational institutions attended to send directly to the Office of Admissions official credentials listing subjects studied, grades received, examinations taken, and degrees received. Certified copies of diplomas and certificates from secondary schools and all colleges and universities attended are required. Records of state examinations and certificates are also needed. All records become the property of the University and *cannot* be returned.

## LANGUAGE TEST

Students from countries whose official language is not English are required to take the *Test of English as a Foreign Language*. Students are responsible for making arrangements for taking the test and should address inquiries to: TOEFL, Educational Testing Service, Princeton, New Jersey 08540, U.S.A. The completed application form should be returned to the Testing Service at Princeton well in advance of the beginning of the semester for which the applicant seeks admission. A \$10 test fee, which should be remitted with the application, entitles the student to have his test score sent to three different institutions. Registration for the *Test of English as a Foreign Language* does *not* constitute application for admission to The George Washington University.

The Bulletin of Information, obtainable without charge, contains description of the test as well as rules regarding application, fees, reports, and the conduct of the test; lists of examination centers; examination dates; and application blank. On the application for the test, the student should specify that the scores be sent to the Office of Admissions, The George Washington University, Washington, D. C. 20006.

If additional tests are prescribed, necessary instructions will be sent to the applicant by the Office of Admissions.

## READMISSION

A student previously registered in the University who was not registered on-campus during the immediately preceding semester (summer session excluded), must apply for readmission. Final dates for applying are the same as those for "Transfer and Graduate Students," see page 16. If he applies as a degree candidate and was previously registered as a nondegree student, or if he has attended one or more higher institutions during his absence from the University, he must have complete, official transcripts sent to the Office of Admissions from each institution attended. Applications for readmission are considered on the basis of regulations currently effective.

The application fee is waived for a student applying for readmission who has previously been admitted to degree candidacy.

## TRANSFER WITHIN THE UNIVERSITY

For information concerning transfer from one college, school, or division to another within the University, see page 35.



For detailed admissions requirements, see the appropriate college or school in this Catalogue.

Tests required for admission and Educational Testing Service information are described on pages 57 and 149.

### TUITION DEPOSIT

Upon notification of acceptance, a \$100 tuition deposit (\$200 for students admitted by "Early Decision Plan," see page 16) will be required of all full-time undergraduate students including those readmitted. The deposit is credited toward tuition and is not refundable.

### ADVANCED STANDING

#### CREDIT FOR ADVANCED PLACEMENT EXAMINATIONS

Up to 30 semester hours of credit may be granted for college-level courses in an approved secondary school, if substantiated by satisfactory performance in the Advanced Placement Examination. Arrangement for the examination is the responsibility of the applicant and should be made with the College Board Advanced Placement Examinations, Educational Testing Service, 20 Nassau Street, Princeton, N. J. 08540; or Box 1025, Berkeley, Calif. 94704.

Credit is assigned for examinations with scores of 4 or 5 on the basis of a score report from the Educational Testing Service. This report must be requested by the student. Examinations with lower grades will be given consideration for possible placement and/or credit if the student arranges to have the examination paper sent to the Office of Admissions at the University.

#### CREDIT FROM HIGHER INSTITUTIONS

Advanced standing may be granted for work successfully completed at accredited institutions of higher learning. Credit will be granted for transferred work only when it meets the requirements for the degree sought at this University. It may be allowed provisionally, and it may be withdrawn for subsequent poor work. Work of low pass grade (*D* or the equivalent) will not be considered for transfer.

#### SERVICE SCHOOL CREDIT

A limited amount of credit earned in service schools since 1941 may be considered for assignment to qualified degree candidates. Veterans should submit to the Office of Admissions photostatic copies of their service school records, indicating courses successfully completed with sufficient identification of the course to locate it in the *Guide to Evaluation of Educational Experience in the Armed Forces*.



### CLASSIFICATION OF STUDENTS

*Regular Students.*—Regular students are those who have met the entrance requirements for candidacy and are registered for degrees or for approved special programs.

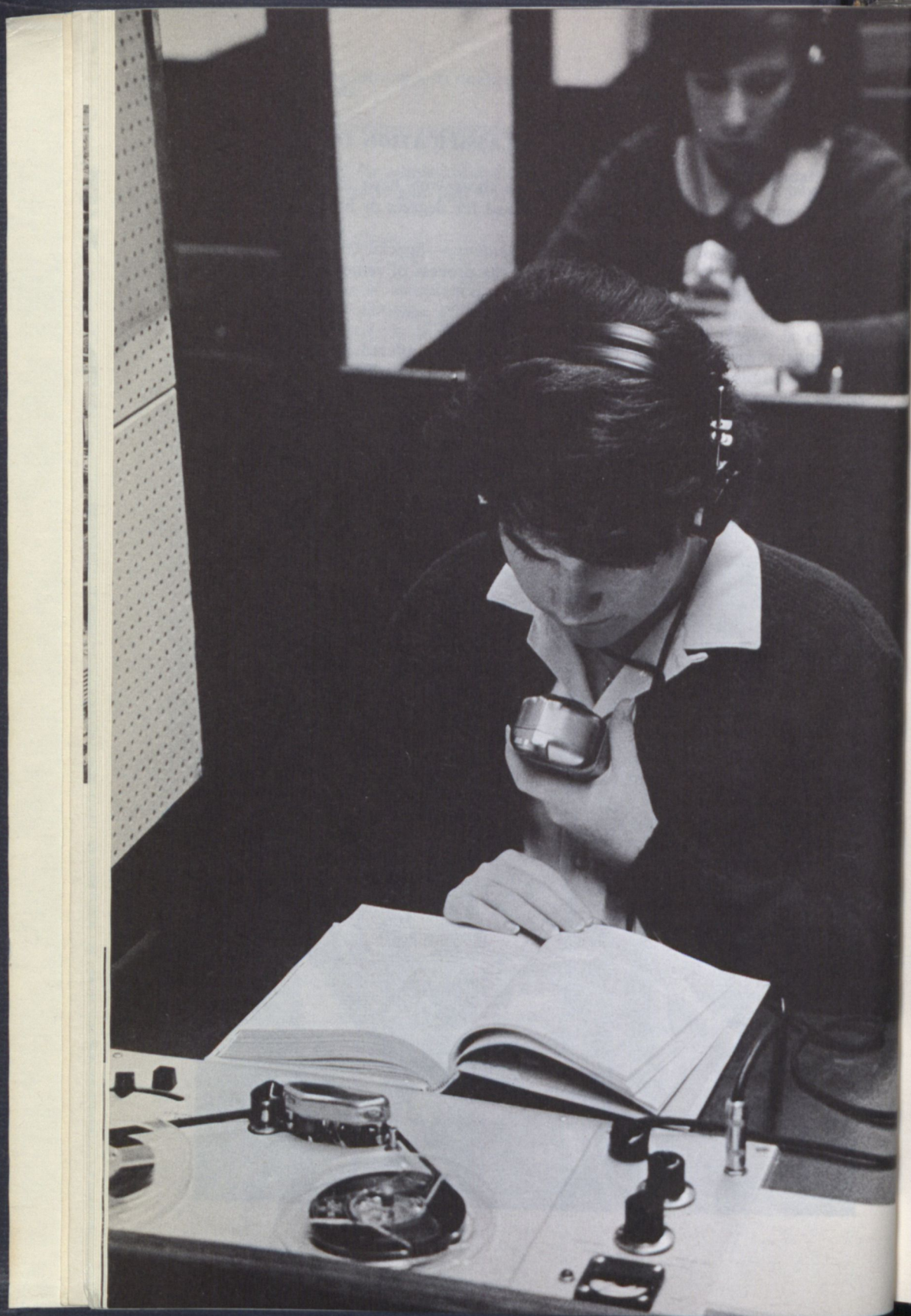
*Special (or probational or provisional) Students.*—Special (or probational or provisional) students are those who are in the process of removing deficiencies in order to qualify as "Regular Students."

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Additional information concerning curricula, courses offered, entrance requirements, or admission procedure may be obtained from the Office of Admissions, 2029 G Street, N.W., Washington, D. C. 20006.









## REGISTRATION

THE DATES, HOURS, AND PLACE OF REGISTRATION will be stated in the *Schedule of Classes*, which is available well in advance of each semester.

A student cannot register for classes until he has received a letter of admission to the University issued by the Office of Admissions.

No registration is accepted for less than a semester or one summer session.

A student may not register concurrently in this University and another institution without the prior permission of the dean of the college, school, or division in which he is registered in this University. Registration in more than one college, school, or division of the University requires the written permission of the deans concerned, *prior to registration*. Allowance of credit for work done concurrently at another institution is at the discretion of the appropriate committee.

### ELIGIBILITY FOR REGISTRATION\*

Registration for the following categories of campus students is held on the days of registration stated in the University Calendar. No student who is suspended or whose record is not clear for any reason is eligible to register.

*New Student.*—Upon receipt of a letter of admission from the Office of Admissions, the new student is eligible for registration on the stated days of registration.

*Readmitted Student.*—A student previously registered in the University who was not registered for campus courses during the preceding semester or summer session, must apply for and receive a letter of readmission from the Office of Admissions, before he is eligible for registration. A student registered for the spring semester of 1966–67 need not apply for readmission for the fall semester 1967–68. Such a student is a “Continuing Student.”

*Continuing Student.*—The student registered for campus courses in the immediately preceding semester of the academic year is eligible to register upon presentation of his student identification card from the previous semester. The student registered for the 1967 Summer Sessions campus courses, and not restricted to summer registration, is eligible to register for the 1967–68 fall semester on presentation of his 1967 Summer Sessions student identification card.

### REGISTRATION CHANGES AND WITHDRAWALS (see pages 24, 26, 35)

\* Registration in a given course may be denied students in the Division of University Students when space is needed for degree candidates.



## FEES AND FINANCIAL REGULATIONS

FEES PAID BY STUDENTS cover only a portion of the cost of the operation of the University. Income from endowment funds, grants, and gifts from alumni and friends of the institution make up the difference.

The following fees and financial regulations were adopted for the academic year 1967-68. (See pages 24-25 for projected tuition increases for 1968-71.)

### Tuition Fees

For undergraduate study in Columbian College of Arts and Sciences, the School of Education, the School of Government and Business Administration, the School of Public and International Affairs; for undergraduate study in the Division of University Students; and for courses taken on campus by undergraduate students in the College of General Studies:

Full-time program (12 to 18 hours), each semester.....	\$812.50
Part-time program or hours in excess of 18, for each semester hour.....	57.00

For graduate study\* in the Graduate School of Arts and Sciences, the School of Education, the School of Government and Business Administration, and the School of Public and International Affairs; for graduate study in the Division of University Students; and for courses taken on campus by graduate students in the College of General Studies (Exception: doctoral students registered prior to July 1, 1967, who wish to continue payments according to the plan (see below) in effect prior to that date):

For each semester hour for which a student registers.....	57.00
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Doctoral students not enrolled under the payment plan in effect before July 1, 1967, are required to register for minimum hour-loads,† as follows:

1. Full-time doctoral students must register for a minimum of 12 semester hours a semester until 24 hours have been completed beyond

\* Payment of tuition for a Master's thesis entitles the candidate, during the period of registration, to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional calendar year may be granted without further tuition payment. The student must, however, maintain continuous registration (see page 36) during this period. If the preparation of the thesis extends beyond the additional calendar year, the student must register for the entire 6 hours of thesis again and pay tuition as for a repeated course.

† No minimum hour-load is required during the summer sessions.



the general examination (Doctor of Business Administration, Doctor of Philosophy, Doctor of Public Administration) or until 12 to 24 hours have been completed beyond the major field examination (Doctor of Education); and for a minimum of 4 semester hours a semester thereafter until the satisfactory completion of the final examination.

2. Part-time doctoral students must register for a minimum of 6 semester hours a semester until 24 hours of work have been completed beyond the general examination (Doctor of Business Administration, Doctor of Philosophy, Doctor of Public Administration) or until 12 to 24 hours have been completed beyond the major field examination (Doctor of Education); and for a minimum of 4 semester hours a semester thereafter until the satisfactory completion of the final examination.

For students registered for doctoral degrees in the Graduate Council (now the Graduate School of Arts and Sciences)\* and the School of Government and Business Administration prior to July 1, 1967, who wish to continue payments according to the plan in effect prior to that date:

For work leading to and including the general examination.....	\$1,625.00
For work leading to and including the final examination.....	1,625.00

For students registered for the Doctor of Education degree† prior to July 1, 1967, who wish to continue payments according to the plan in effect prior to that date:

For work leading to and including the major field examination.....	2,031.25
For work leading to and including the final examination.....	1,218.75

#### Additional Course Fees

In certain courses additional fees, such as laboratory and material fees, are charged as indicated in the course descriptions. These fees are charged by the semester and, unless otherwise indicated, may be defrayed in two payments when the tuition is paid in this manner. Breakage of apparatus is charged against the individual student. When breakage is in excess of the normal amount provided for in the laboratory fee the individual student will be required to pay such additional charges as are determined by the department concerned.

#### Graduation Fees

Associate in Arts.....	\$10.00
Bachelor's, Master's, Education Specialist, Doctor's degrees.....	25.00
Certificate of the Institute for Sino-Soviet Studies, Graduate Certificate in Health Care Administration.....	25.00

Fee for Binding Master's Thesis.....	6.00
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Fee for Microfilm Service and Printing Abstract of Doctoral Dissertation	55.00
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\*The tuition fee is to be paid at the rate of \$406.25 a semester or in full at the beginning of each stage of the doctoral discipline. No "continuous registration" fee will be charged if a third year is needed for completion of either part of the degree requirements. If still more time is needed, the student must maintain continuous registration and pay the continuous registration fee.

† As long as there is an unpaid balance for the part of the program on which the student is working, he must make at least the minimum tuition payment of \$203.13 at each fall and spring registration (and for any summer session in which he registers for academic work).

If the total fee is paid for the part of the program on which the student is working, he may continue to register, without additional fee, for courses approved by his Master in Research, until the expiration of the time allowed for that part of his program.



**Residence Hall Fees (see page 40)****Special Fees**

Application fee (degree candidate), nonrefundable.....	\$25.00
Tuition deposit, nonrefundable:	
Charged each entering or readmitted full-time undergraduate student, except early decision freshmen.....	100.00
Charged each freshman admitted by the early decision plan.....	200.00
Application for room reservation, nonrefundable:	
Charged each resident student except early decision freshmen.....	100.00
Charged each student admitted by the early decision plan.....	200.00
Admission tests (when required) .....	6.00-12.00
National Teacher Examinations fee, for Bachelor of Arts in Education degree candidates .....	9.00-13.00
Late-registration fee, for failure to register within the designated period....	15.00
Change fee, for each change in program: dropping or adding a course, changing from one section to another within a course, change of status (from auditor to credit status or vice versa), and change in credit hours for a course.....	2.00
Withdrawal fee, charged in special cases.....	5.00
Service fee, for deferred payment plan (see "Payment of Fees" below).....	5.00
Reinstatement fee, for reinstatement after financial suspension.....	10.00
Continuous Registration fee, to maintain "continuous registration" status during any semester of absence from the University or after completion of tuition requirements*—due and payable on the official days of registration .....	57.00
For special physical examination.....	2.00
For each examination to qualify for advanced standing and for each special examination .....	5.00
English test for foreign students (when required).....	5.00
Laboratory checkout fee, for failure to check out of Chemistry laboratory by the date deadline set by the instructor†.....	3.00
Transcript fee, for each transcript of record.....	1.00

Registration in the University entitles each student to the following University privileges: (1) the services of the Placement Office; (2) the use of University library; (3) gymnasium privileges; (4) admission to all athletic contests, unless otherwise specified; (5) subscription to the *University Hatchet*, the student newspaper; (6) admission to University debates; (7) medical attention and hospital services as described under Health Services. These privileges terminate and a student is no longer in residence, when he withdraws or is dismissed from the University.

**PROJECTED TUITION INCREASES 1968-71**

In order that students and their parents may plan more realistically for a total four-year period, tuition increases for the academic years 1968-69, 1969-70,

\* Payment of the continuous registration fee entitles the student who is granted leave of absence to return and continue his work toward a degree under the academic requirements which were in force at the time of his first registration. The continuous registration fee applies toward neither tuition fee nor residence requirements for the degree.

† This fee does not apply to students granted military leave, see pages 36-37.

‡ A student who drops a chemistry course before the end of the semester must check out of the laboratory at the next regular laboratory period.



and 1970-71 have been estimated as follows:

Increase by year (full-time undergraduate students):

1968-69 .....	\$75.00
1969-70 .....	100.00
1970-71 .....	100.00

Increase by semester hour (graduate and part-time undergraduate students):

1968-69 .....	3.00
1969-70 .....	4.00
1970-71 .....	4.00

It is not possible to project future economic data with certainty. Barring unforeseen developments, however, the above listed tuition schedule will be followed.

### PAYMENT OF FEES

All fees are payable at the Office of the Cashier. Checks and postal money orders should be made out to The George Washington University. No student is permitted to complete registration or attend classes until all fees are paid.

Tuition and fees for each semester are due and payable in full at the time of each registration.

The Student Accounts Office has responsibility for creating, billing, and maintaining student accounts resulting from tuition and room and board charges. A student registered for six semester hours or more may sign a contract with this Office at the time of each registration permitting him to pay one-half of the total tuition and fees (except for fees payable in advance) at the time of registration and the remaining half on or before November 1, 1967 (for the fall semester) and March 13, 1968 (for the spring semester). A service fee of \$5 will be charged for the use of this deferred payment plan. The University will not obligate itself to notify the student, in advance, of the payment-due date for the second half of the semester charges. Students who fail to make any payment when due will be automatically suspended and may not attend classes until they have paid all accrued fees and a \$10 reinstatement fee and have been officially reinstated by the Student Accounts Office.

A student suspended for failure to meet payments when due may not be reinstated for the semester after two weeks from the date of suspension. Applications for reinstatement are to be made to the Student Accounts Office.

An auditor pays all fees chargeable to the student registered for credit except the late-registration fee.

Because many parents may wish some option in meeting and financing all or part of the cost of a college education, the University offers educational loan plans through the Girard Trust Exchange Bank in Philadelphia, Pennsylvania; Funds for Education, Inc., Manchester, New Hampshire; and The Riggs National Bank, Washington, D. C.

Although similar in purpose, these plans vary somewhat in coverage and conditions. One-year and multiple-year plans are available. Insurance covering the life and health of the sponsor is provided through these plans.



Individuals over twenty-one years of age who are employed full-time are also eligible to apply. They may sponsor their own contracts, provided they meet the conditions specified by the plan for which they are applying.

Brochures and applications describing these plans are available in the Office of Student Financial Aid.

### WITHDRAWALS AND REFUNDS

Applications for withdrawal from the University or for change in class schedule must be made in person or in writing to the dean of the college, school, or division in which the student is registered. Notification to an instructor is not an acceptable notice (see "withdrawal," page 35).

In authorized withdrawals and changes in schedule, cancellations of semester tuition charges and fees will be made in accordance with the following schedule:

1. *Complete withdrawal from the University:*

FALL SEMESTER

Withdrawal dated on or before September 22, 1967.....	90 per cent
Withdrawal dated September 25 to October 6, 1967.....	75 per cent
Withdrawal dated October 9 to October 20, 1967.....	50 per cent
Withdrawal dated after October 20, 1967.....	none

SPRING SEMESTER

Withdrawal dated on or before February 2, 1968.....	90 per cent
Withdrawal dated February 5 to February 16, 1968.....	75 per cent
Withdrawal dated February 19 to March 1, 1968.....	50 per cent
Withdrawal dated after March 1, 1968.....	none

2. For a *change in status from full-time to part-time student* or for *partial withdrawal by a part-time student*, the above schedule applies to the difference in charges between the original program and the adjusted program continuing in effect.
3. A student enrolled in a full-time program who drops or adds a course and continues to be in a full-time program will have no financial adjustments of tuition made other than those involving course fees.

In no case will tuition be reduced or refunded because of absence from classes.

Payment applies only to the semester for which a registration charge is incurred and in no case will this be credited to another semester.

Authorization to withdraw and certification for work done will not be given a student who has not a clear financial record.

Students are encouraged to provide their own cash funds until they can make banking arrangements in the community.





## FINANCIAL AID

### For Undergraduate Students

THE GEORGE WASHINGTON UNIVERSITY has a program of financial assistance for undergraduate students (including transfer students) of scholarships, low-interest long-term loans, grants, part-time employment, or any combination of these resources. Financial aid is awarded on the basis of the student's scholastic record, financial need, and qualities of leadership and character.

Scholarships are awarded for the academic year. Application must be filed by entering freshmen February 1 preceding the academic year of the award.

Applications and supporting credentials for all other types of financial aid must be filed by February 1 (entering freshmen), March 1 (enrolled undergraduate or entering transfer students) preceding the academic year of the award for the fall semester; by October 31, for the spring semester; and by May 1, for the summer session\*.

The following scholarships are limited to students in Columbian College of Arts and Sciences, the Graduate School of Arts and Sciences, the School of Education, the School of Government and Business Administration, and the School of Public and International Affairs. The University also offers many other scholarships which are available to students in these colleges and schools.

Complete information concerning financial assistance is contained in the pamphlet "Student Financial Aid," which is available at the Office of Student Financial Aid, The George Washington University, Washington, D. C. 20006.

*The George Washington University Board of Trustees Scholarships.*—Full- and partial-tuition scholarships, which will begin in the fall semester and extend for four successive academic years, provided the holder maintains a *B* average, as well as a high standard of deportment, and continues to be in financial need. Candidates must plan to select a curriculum leading to a Bachelor's degree in any school of the University, except the National Law Center or the College of General Studies. Students who have demonstrated outstanding ability in inter-scholastic speech and debate activities are eligible for the Board of Trustees Scholarships in Debate.

\* A Summer Sessions student is eligible for consideration only if he is enrolled in this University for at least 8 semester hours in the immediately preceding spring semester or has applied for financial aid for the following fall semester.



*Alumni Scholarships*

- American Society of Women Accountants Scholarship (1953)*  
*Byron Andrews Scholarship (1920)*  
*Bache and Company Scholarship (1966)*  
*Beta Sigma Phi Scholarship (1962)*  
*Henry N. Brawner, Jr., Foundation Scholarship Fund (1963)*  
*Emma K. Carr Scholarships (1932)*  
*Maria M. Carter Scholarship (1871)*  
*Chi Omega Alumni Scholarship (1966)*  
*Colortone Graphic Arts and Publications Scholarship (1961)*  
*Columbian Women Scholarship Funds*  
     *Victoria Briggs Scholarship Fund (1959)*  
     *Elizabeth V. Brown Scholarship Fund (1925)*  
     *Grace Ross Chamberlin Scholarship Fund (1932)*  
     *College Women's Scholarship Fund (1926)*  
     *Columbian Women Members' Scholarship Fund (1961)*  
     *Arline Hughes Dufour Scholarship Fund (1961)*  
     *Dr. Watson W. Eldridge, Jr., and John F. Eldridge Scholarship Fund (1964)*  
     *Founders of Columbian Women Scholarship Fund (1920)*  
     *Rose Lees Hardy Foundation Scholarship Fund (1957)*  
     *Lillian Young Herron Scholarship Fund (1925)*  
     *Nellie Maynard Knapp Scholarship Fund (1915)*  
     *Marcia B. Kraft Scholarship Fund (1966)*  
     *Janet McWilliams Scholarship Fund (1954)*  
     *Marie-Louise Ralph Turner Scholarship Fund (1963)*  
*Daughters of the American Revolution Scholarship (1952)*  
*Isaac Davis Scholarship (1869)*  
*Debate Scholarships*  
     *District of Columbia Institute of Public Accountants Scholarship (1964)*  
     *Estella Constance Drane Scholarship (1957)*  
     *Robert Farnham Scholarship (1871)*  
     *Federal Government Accountants Association of Washington, D. C., Scholarship*  
     *Esther Brigham Fisher Scholarship (1951)*  
     *General Motors College Scholarship (1955)*  
     *Georgetown Business and Professional Woman's Club Scholarship (1958)*  
     *Mildred Green Memorial Scholarship Fund (1959)*  
     *Anna Spicker Hampel Scholarship (1949)*  
     *Elma Lewis Harvey Scholarship (1921)*  
     *Hazleton Scholarship (1950)*  
     *Jewish War Veterans' Auxiliary Scholarship (1964)*  
     *Amos Kendall Scholarship (1869)*  
     *Eugene and Agnes E. Meyer Scholarships (1952)*  
     *A. Morehouse Scholarship (1861)*  
     *Helen Marie and Thomas E. Orr Scholarships (1965)*  
     *Levin M. Powell Scholarships (1886)*  
     *Phi Delta Gamma Scholarship (1956)*  
     *Lula M. Shepard Scholarships (1946)*  
     *Sigma Delta Chi Foundation of Washington, D. C., Scholarships*  
     *Julian Singman Art Scholarship (1963)*  
     *David Spencer Scholarship (1918)*  
     *Mary Lowell Stone Scholarship (1893)*



*Charles Clinton Swisher Scholarships (1941)*  
*Tau Kappa Epsilon Scholarship (1959)*  
*U. S. Office of Education Traineeships (1964)*  
*University Foreign Service Scholarships*  
*University Hospital Scholarships in Medical Technology*  
*William Walker Scholarship (1824)*  
*Abigail Ann Brown White and Henry Kirk White Scholarship Fund (1963)*  
*John Withington Scholarship (1830)*  
*Women's Physical Education Alumnae Association Scholarship (1964)*  
*Ellen Woodhull Scholarship (1919)*  
*Zonta Club Scholarship (1950)*

## For Graduate Students

THE GEORGE WASHINGTON UNIVERSITY program of financial assistance for graduate students includes assistantships, fellowships, traineeships, graduate scholarships, research appointments, and loans. Application for admission to graduate study is a prerequisite for consideration.

Application and correspondence concerning assistantships, fellowships, traineeships, or graduate scholarships should be sent directly to the chairman of the department or dean of the school concerned, and addressed to The George Washington University, Washington, D. C. 20006. Unless otherwise specified, application and supporting credentials should be submitted not later than March 1 preceding the period for which the award is made.

Applications for National Defense Student Loans or United Student Aid Fund Loans must be submitted to the Office of Student Financial Aid by April 1 for the following academic year.

### ASSISTANTSHIPS

*Graduate Teaching Assistantships.*—Open in various departments of instruction to candidates for the Master's degrees. Each graduate teaching assistant renders a designated unit of service to his major department of instruction, and receives, depending upon his teaching or laboratory assignment, up to \$2,200 on a nine-month basis plus tuition and laboratory fees for the program of studies which the duties of his assistantship permit him to carry. Tuition and laboratory fees may not exceed those applying to half-time study. Application should be made to the chairman of the department of instruction concerned.

*Resident Assistantships for Graduate Women.*—Available to single women enrolled in any field of graduate study. Each assistant receives tuition and laboratory fees (not to exceed \$1,625 for the academic year) for whatever schedule of study her duties permit her to carry, and a furnished shared apartment in a residence hall. Resident assistants serve as advisers to the residence hall governing councils and student committees; work with students to develop programs which extend the academic climate into the residence hall; participate in the general administration of the residence hall. Application should be submitted to the Office of the Dean of Women no later than March 1.



**FELLOWSHIPS**

The following fellowships are limited to students in the Graduate School of Arts and Sciences, the School of Education, the School of Government and Business Administration, and the School of Public and International Affairs. The University also offers many other fellowships which are available to students in these colleges and schools.

Complete information concerning fellowships is contained in the pamphlet "Student Financial Aid," which is available at the Office of Student Financial Aid, The George Washington University, Washington, D. C. 20006.

*University Teaching Fellowships.*—Assigned for the academic year to the various departments of instruction. The applicant is expected to be a prospective candidate for a doctoral degree in the general field of his future doctoral study. Each teaching fellow receives an annual stipend (on a nine-month basis) of up to \$2,400 plus tuition and laboratory fees for whatever schedule of study or research his fellowship duties permit him to carry. Tuition and laboratory fees may not exceed those applying to half-time study. Stipends vary with the work load of the individual teaching fellow. Normally a University teaching fellow renders half-time service in classroom or laboratory assignments to the department of instruction directing his doctoral study. Application should be made to the chairman of the department of instruction concerned.

*American Security and Trust Company Fellowship (1960)*  
*Graduate Teaching Fellowships in Behavioral Science*  
*Winfield Scott Blaney Fellowship in International Affairs (1961)*  
*Gilbert Grosvenor Teaching Fellowship (1961)*  
*W. K. Kellogg Foundation Teaching Fellowship (1964)*  
*Isabella Osborn King Research Fellowships (1927)*  
*Robin Miller Research Fellowship (1953)*  
*National Aeronautics and Space Administration Predoctoral Traineeships*  
*National Defense Education Act Fellowships*  
*National Science Foundation Predoctoral Traineeships*  
*Thomas Bradford Sanders Fellowships (1928)*  
*Scottish Rite Fellowships*  
*Special Fellowships for Women*  
*U. S. Office of Education Fellowships (1964)*  
*U. S. Public Health Service Predoctoral Fellowships*  
*U. S. Public Health Service Traineeships*

**GRADUATE SCHOLARSHIPS**

*Gamma Phi Beta Sorority Scholarships (1962)*  
*Special Program in Elementary Teacher Education (1963)*  
*Wolcott Foundation Scholarships*

**SPONSORED AWARDS FOR GRADUATE STUDY**

General information regarding awards sponsored by foundations, government agencies, professional and learned societies, industries, and others which may be used in support of graduate study is available at the Graduate School of Arts and Sciences for students enrolled at The George Washington University. Such



scholarships and fellowships include the Rhodes, Marshall, Woodrow Wilson, Fulbright, Rotary International, and Danforth.

As deadlines for application vary, qualified students should make inquiries well in advance of the year of planned graduate study.

### Loan Funds

THE FOLLOWING LOAN FUNDS are available to undergraduate and/or graduate students in Columbian College of Arts and Sciences, the Graduate School of Arts and Sciences, the School of Education, the School of Government and Business Administration, and the School of Public and International Affairs. Complete information is contained in the pamphlet "Student Financial Aid," which is available in the Office of Student Financial Aid, The George Washington University, Washington, D. C. 20006.

*American Medical Association Nursing Home Administration Loan Fund*

*W. K. Kellogg Foundation Hospital Administration Loan Fund*

*Long-term Care Loan Fund*

*National Defense Student Loan Fund*

*U. S. Loan Fund for Cuban Students*

*United Student Aid Fund*





## **Educational Opportunity Grants**

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Educational Opportunity Grants, as authorized by the Higher Education Act of 1965, are available to a limited number of undergraduate students with substantial financial need. The applicant must show academic promise, be accepted for enrollment on a full-time basis, or be a currently enrolled full-time student in good standing.

Students may receive Educational Opportunity Grants for each year of their higher education although the maximum duration of a grant is four years. As an academic incentive to students, an additional award of \$200 may be given to those students who were in the upper half of their college class during the preceding year.

Federal regulations require that the grant be matched with funds from the University. It should be noted that a student must accept the matching funds unless he is a bonafide recipient of a known State Scholarship which is equal to the amount of the Educational Opportunity Grant.

## **College Work-Study**

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Federal College Work-Study is a program of employment in which a full-time student, particularly one from a low-income family, is compensated for the number of hours he works for the institution or for an eligible off-campus agency. Applications and information are available at the Student Placement Office.

## **Research Assistantships in Data Processing**

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The University offers Research Assistantships in data processing and related fields to full-time juniors, seniors, and graduate students who have *B* averages. Research Assistants will be expected to work for 20 hours a week in the activities of the program. Prior experience is not essential. Remuneration for a nine-month period will range from \$2,975 for juniors to \$4,225 for graduate students. For further information, consult the Administrator, Logistics Research Project, The George Washington University, Washington, D. C. 20006.

## **Student Employment**

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The Student Placement Office maintains a registry of both full-time and part-time positions available in the Washington area for undergraduate and graduate students.

After registration, interested students may apply at the Student Placement Office, 2114 G Street, N.W., for interviews and referrals to positions for which they are qualified.



A STUDENT ENROLLED in the University is required to conform to the following University regulations and to comply with the rules and regulations of the college, school, or division in which he is registered.

If a student knowingly makes a false statement or conceals material information on an application for admission, registration card, or any other University document, his registration may be canceled and he will be ineligible (except by special action of the Faculty) for subsequent registration in the University.

A maximum of 45 semester hours earned at the Division of University Site

*Undergraduate.*—The following grading system is used: *A*, excellent; *B*, good;

been assigned, the symbol  $\gamma$  (incomplete) or the symbol  $\eta$  (authorized)



withdrawal) will be recorded. The symbol *I* indicates that a satisfactory explanation has been given the instructor for the student's failure to complete the required work of the course. An "incomplete" cannot be made up after the lapse of one calendar year except by written permission of the dean's council of the college, school, or division concerned. An incomplete which is not removed within one calendar year is automatically changed to an *F*. An incomplete cannot be removed by repeating the course. A student may not repeat for grade a course in which he has received a grade of *D* or above, unless required to do so by the department concerned. A written statement to this effect must be submitted to the Registrar by the appropriate departmental chairman.

*Graduate.*—For graduate work, grades are indicated as *A, B, C, F* (for definition of these grades see the appropriate college, school, or division); *I* (incomplete); *CR* indicates credit.

#### THE QUALITY-POINT INDEX

Scholarship is computed in terms of the quality-point index, obtained by dividing the number of quality points by the number of semester hours for which the student has registered, both based on the complete record in this University. Quality points are computed from grades as follows: *A*, four points; *B*, three points; *C*, two points; *D*, one point; *F*, no points, for each semester hour for which the student has registered. Courses marked *W* or *I* are not considered in determining the index, except that courses marked *I* will be considered when a formal grade is recorded. An incomplete which is not removed within one calendar year is automatically changed to an *F*. Grades in courses taken at another institution are not considered in computing the quality-point index.

#### EXAMINATIONS

Examinations are scheduled at the end of each semester or at the completion of the course.

#### ACADEMIC DISHONESTY

Evidence of dishonesty on the part of any student will result in his suspension from the University upon the recommendation of the appropriate dean's council.

A student found guilty of dishonesty will be suspended for a stated period and will be deprived of credit for all courses in which he is enrolled during the semester in which the dishonest act occurs. A disciplinary grade of "Failure—Academic Dishonesty" will be recorded for each such course, and this grade will be employed in computation of the quality-point index.

A student who is readmitted after suspension because of academic dishonesty may be required to repeat for grade all courses for which a disciplinary grade was recorded, and both the grade earned on repetition and the disciplinary "Failure—Academic Dishonesty" grade are included in computing the quality-point index.



**WITHDRAWAL**

Withdrawal from a course or from the University requires the permission of the dean of the college, school, or division in which the student is registered. Permission to withdraw from the University will not be granted a student who does not have a clear financial record. (See page 26.)

Withdrawal between the last working day\* in October and the end of the fall semester and between the last working day\* in February and the end of the spring semester is permitted only in exceptional cases.

*All charges for courses dropped without the approval of the dean must be met by the student. Reporting the dropping of a course to an instructor does not effect its discontinuance.*

**CHANGES IN PROGRAM OF STUDIES**

*Changes within a College, School, or Division.*—A student may not substitute one course for another, drop courses (see "Withdrawal," above), change his status from credit to audit or audit to credit without the approval of the dean of the college, school, or division in which he is registered.

Change from one section to another of the same course may be made with the approval of the dean and the department concerned.

Change from one major subject to another within the same college or school may be made with the approval of the dean. All requirements of the course of study to which the change is made must be met.

*Transfer within the University.*—Except in cases of normal progression from the lower division of Columbian College of Arts and Sciences in a regular baccalaureate program, application for transfer to another college, school, or division must be made to the Office of Admissions on the form provided by that Office and must be approved by the deans concerned. Application for transfer from the lower division of Columbian College to the upper division or to Bachelor's candidacy in the School of Education, the School of Government and Business Administration, or the School of Public and International Affairs must be made on the appropriate form. This form is available in the Office of the Dean of Columbian College or in the Office of the Registrar.

A maximum of 45 semester hours earned in the Division of University Students can be applied toward a Bachelor's degree in a degree-granting college or school of the University. Work done in the Division of University Students will not be counted toward a graduate degree unless prior written approval, obtained from the relevant degree-granting college or school, has been filed in the Office of the Dean of the Division of University Students.

Students transferring within the University are advised to study carefully the graduation requirements on pages 37–38 and to note that in all undergraduate divisions, except the lower division of Columbian College of Arts and Sciences, 30 semester hours, including at least 12 semester hours in the major field, must be completed while registered in the school or college from which the degree is sought. Upon transfer the student should consult the dean concerned and understand clearly the requirements he must fulfill. (For residence requirements in the lower division of Columbian College of Arts and Sciences, see pages 63 and 68.)

\* The University work week is Monday through Friday, inclusive.



### CREDIT

Credit is given only after registration for a course and satisfactory completion of the required work, or upon the assignment of advanced standing in accordance with the regulations of the several colleges, schools, and divisions.

*Auditing.*—In special instances, a person who has been admitted to the University may be registered, with the permission of the instructor, as an "auditor" in a class (no academic credit). An auditor is not required to take active part in the exercises or to take examinations. A student who takes a course as an auditor may not repeat it later for credit.

### BALANCE SHEET

On request, the Registrar will issue to undergraduate degree candidates a balance sheet showing the amount of work completed and the requirements remaining to be met for the degree. A second balance sheet is issued only if the student changes major or degree objectives.

### TRANSCRIPTS OF RECORD

Official transcripts of student records are issued on request of the student or former student who has a clear financial record. A fee of one dollar is charged for each transcript.

### SUMMER SCHOOL CREDIT

A student who plans to attend summer school at another institution and apply credit so earned toward graduation from this University must first secure the written approval of his dean. In no event will credit in excess of what might be earned in a similar period in this University be recognized.

### CONTINUOUS REGISTRATION

Degree candidates are expected to maintain continuous registration until *all* degree requirements are satisfied. Students who have completed course registration (including the thesis) must maintain continuous registration by paying the "continuous registration" fee (see page 24). By failing to register for one semester or more, the student breaks his registration and must be readmitted (see "Readmission," page 17). A "Readmitted Student" is required to satisfy the curriculum requirements existing at the time of his readmission.

Students must be registered during the summer if they elect to take courses, are taking required examinations, are receiving guidance toward theses or dissertations, or are expecting to graduate at the end of the Summer Sessions.

### MILITARY LEAVE

A student called to active duty will be granted military leave for the period of active duty, upon presentation to his Dean of a copy of his orders and a petition



for such leave. The maintenance of "continuous registration" is not required of the student on military leave; however, he must apply for readmission to the University prior to the semester in which he expects to return.

#### GRADUATION REQUIREMENTS

Degrees are conferred at a February Convocation, a June Commencement, and in September.

To be recommended by the Faculty for graduation a student must have met the admission requirements of the college or school in which he is registered; completed satisfactorily the scholarship, curriculum, residence, and other requirements for the degree for which he is registered; and be free from all indebtedness to the University. Registration, either for course work or on the "continuous registration" fee basis, is required for the semester or summer session immediately preceding the awarding of a degree.

*Application for Graduation.*—Application for graduation must be filed and the appropriate fee paid at the time of registration for the last semester or summer session of the senior or final year. Students completing degree requirements during the Summer Sessions will be awarded diplomas (no formal convocation) September 30, *provided* they have completed all degree requirements and have applied for graduation as a part of registration for the Summer Sessions.

*Scholarship.*—In all undergraduate divisions of the University a quality-point index of at least 2.00 is required for graduation.

The graduate student must meet the scholarship requirements for the particular degree for which he is registered.

*Curriculum.*—Minimum curriculum requirements for each degree are stated under the college or school offering work in preparation for the degree.

*Residence.*—Unless otherwise specified, in all undergraduate divisions of the University, a minimum of 30 semester hours, including at least 12 hours in the major field, must be completed while registered in the school or college from which the degree is sought. This requirement applies to students transferring within the University as well as to students transferring from other institutions. Summer work may be counted toward the residence requirement, but in no case may the period of residence aggregate less than thirty weeks. Unless special permission is granted by the dean of the college or school concerned to pursue work elsewhere, the work of the senior or final year must be completed in the college or school from which the degree is sought.

The graduate student must meet the residence requirements for the particular degree for which he is registered.

*National Teacher Examinations.*—All candidates for the degree of Bachelor of Arts in Education are required to take the National Teacher Examinations.

*Attendance and Conduct.*—The University reserves the right to refuse to confer a degree upon a candidate whose attendance or conduct has been unsatisfactory.

*Thesis or Dissertation.*—A thesis or dissertation submitted in partial satisfaction of requirements for a degree must be presented in its final form to the dean of the college or school concerned no later than the date specified in the University calendar. See the appropriate college or school in this catalogue for regulations governing theses and dissertations.



**HONORS**

*With distinction.*—In all undergraduate divisions of the University the degree may be conferred "with distinction," at the discretion of the Faculty, if a student attains a quality-point index of 3.50 or higher on all work taken at this institution. To be eligible a student must have completed at this institution at least one-half of the work required for the degree.

*Special honors.*—Special honors may be awarded by the Faculty to any member of the graduating class for outstanding achievement in the student's major field on recommendation of the major department.

The student must (1) have his candidacy for special honors approved by the faculty member representing the major department or field not later than the beginning of the senior year, (2) meet such other conditions as may be set at the time his candidacy is approved, (3) maintain a quality-point index of at least 3.00 on all work taken at this institution, and (4) have completed at this institution at least one-half of the work required for the degree.

**THE LIBRARY**

A student registered in the University is entitled to the use of the University Library. The Student Identification Card, issued upon the payment of fees, must be presented as identification.

The loan period for most books available for home circulation is two weeks, with an additional two-week renewal. A fine of five cents is charged for each day a book is overdue. Any book which circulates is subject to recall by the Librarian at any time. Reserve books must be used in the reserve reading rooms when the Library is open. With special permission they may be drawn for overnight use at closing time. A fine of twenty-five cents is charged for the first hour or fraction of an hour and five cents for each hour or fraction thereafter that a reserve book is overdue. Grades of a student are withheld until his library record is clear.

**RIGHT TO DISMISS STUDENTS**

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable.

**RIGHT TO CHANGE RULES**

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

**PROPERTY RESPONSIBILITY**

The University is not responsible for the loss of personal property. A "Lost and Found" Office is maintained in the Student Union.



## STUDENT LIFE

### OFFICE OF THE DEAN OF STUDENTS

*Acting Dean of Students; Dean of Men* P.V. Bissell

*Dean of Women* Virginia Kirkbride

THE OFFICE OF THE DEAN OF STUDENTS develops policies and procedures to complement the University's formal instruction program. This program is implemented through the offices of the Dean of Men, Dean of Women, Health Services, Veterans Education, International Students, Psychological Clinic, and Student Activities.

### RESIDENCE HALLS

Complete information concerning the University's residence halls is available at the Office of the Dean of Men or the Office of the Dean of Women, The George Washington University, Washington, D. C. 20006.

Information concerning off-campus housing near the University may be obtained at the Office of the Dean of Men. The reservation of rooms in private houses must be made by students.

Admission to the University does not include a room reservation. The student will receive, with his notification of acceptance, a university residence hall brochure, an application for residence hall space, a medical examination form, and a declaration of intent to attend the University. The medical examination form must be completed by the applicant and his physician and returned to the University Health Services Office. The application for residence hall space must be accompanied by a \$100 nonrefundable deposit (\$200 for applicants admitted by early decision). Early decision students *must* submit the deposit by January 15. The housing deposit is credited toward the first semester's room charge.

All unmarried freshman men and women and sophomore women under the age of 21 who are enrolled for twelve or more hours of academic work during the fall or spring semester or six or more hours during a summer session are required to live in the University residence halls or at home with their parents or guardians. In exceptional cases permission to live elsewhere may be granted by the Dean of Men or the Dean of Women.



## 1967-68 Residence Hall Rates for Two Semesters

	Room and Food Service	Room Only
<b>For Men:</b>		
Adams Hall		
double room (upperclassmen).....	\$1,050	\$500
triple room (freshmen).....	1,000	450
Calhoun Hall (upperclassmen).....	1,050	500
Madison Hall (graduate and professional students).....	1,050	500
Mitchell Hall (freshmen)		
single room.....	1,150	600
double room.....	1,050	500
Welling Hall.....	970	420
<b>For Women:</b>		
Crawford Hall (upperclass women).....	1,150	600
Graduate Women's Hall.....	1,235	685
Strong Hall (upperclass women)		
single room.....	1,235	685
double room.....	1,150	600
Thurston Hall.....	1,150	

## FOOD SERVICE

Residents of Thurston Hall and all resident freshman men under twenty-one are required to participate in the food service plan. The plan is optional for all other residents. Well-balanced meals are served cafeteria style seven days a week (20 meals). Food service payment does not cover University holidays or vacation periods. All meal cards admit to the dining rooms in Thurston and Mitchell Halls. Residents of Adams, Calhoun, Madison, Welling, Crawford, and Strong Halls are given preference for the use of the dining room on the second floor of the Student Union. Residents of Thurston and Mitchell Halls may use the Student Union dining room only by special permission, which is granted those whose schedules allow very limited dining periods.

## HEALTH SERVICES\*

University Physicians R.B. Castell (*Director*), Margaret Callan  
 University Surgeon J.B. Harrell  
 Associate University Physicians M.O. Kepler, Margaret McCabe, J.W. McTigue  
 (Eye), R.F. Dyer, G.T. Economos, J.T. Hagenbucher, H.O. House (*Nose and Throat*), Richard Schoenfeld, R.B. Atkins  
 Associate University Surgeon D.C. Wherry  
 Nurses Anne Winn, Toby Curtis

The Health Services Staff assists students with their medical needs by advice and treatment, by proper referral when necessary, and by cooperation with other physicians. For medical emergencies and health consultations there is, on the campus, a Student Health Clinic open from 9 a.m. to 10 p.m., Monday through Friday, during the academic year and Summer Sessions, with physician and nurse in attendance. There is also a rest room for women, with a graduate

\* Staff for the academic year 1966-67.



nurse in charge. For night and weekend emergencies, students may go to the emergency room of the University Hospital for treatment. The basic fee for this visit will be paid by the Health Services, and all other charges will be the responsibility of the student. This arrangement is for emergency care only.

Medical privileges include: (1) physical examination\* of all applicants for courses in Physical Education who lack reports, approved by the Office of Health Services, of examinations by home physicians; (2) three visits in any one illness by a member of the Health Services Staff, office or residence (District of Columbia); (3) hospitalization, including board and nursing, in the University Hospital for not more than one week during any twelve-month period—the necessity to be determined by the Director of Health Services†. All additional hospital charges for operating room, anesthetics, laboratory, X-ray, medications, or any special services must be paid by the student. Expenses incurred for examinations and treatment by specialists, such as eye refraction and provision of glasses; orthopedic examinations and application of cast or other appliance; laboratory and X-ray work; and surgical operations must be paid by the student.

These medical benefits apply only to illness or disability incurred while currently enrolled in the University. They do not apply to illness or disability incurred between the last day of examinations for a semester or summer session and completion of registration for the next semester or summer session.

The student is allowed, if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

Rules: (1) the Director of Health Services is empowered to limit or deny the medical benefits where, in his discretion, a student has, by his misconduct or breach of the rules of the University, made himself ineligible; (2) the Director of Health Services has authority to determine the necessity and length of hospitalization; (3) a student not currently enrolled or one who has severed his connection with the University is ineligible for medical benefits; (4) a student intending to train for an athletic team is required to pass a thorough examination at the beginning of each semester; (5) hospitalization is not available to those students availing themselves of other hospitalization coverage for the same illness.

The University is not responsible for injuries received in intercollegiate or intramural games, or in any of the activities of the departments of Physical Education, Health, and Recreation.

#### HEALTH AND ACCIDENT INSURANCE

In addition to the above services, the Health Services Staff has arranged for Health and Accident Insurance, on an elective basis, for all full-time students. This policy covers the participant for 12 months, whether at home, at the University, or elsewhere.

Current yearly cost is \$26.40 payable at the fall registration. Arrangements can be made to pay in two installments of \$13.20 at the fall and spring registrations.

\* A charge for a special physical examination is made by the University if a student fails to appear for a physical examination during the period set for this purpose.

† See rule (5) for exception.



This policy contract is between the individual student and the insurance carrier and is accepted at any hospital or emergency room that accepts this type of medical work. Details of the policy are available at the Health Services Office.

### PSYCHOLOGICAL CLINIC

*Director* E.L. Phillips

The George Washington University Psychological Clinic, 718 Twenty-first Street, N.W., offers services which are available primarily to students enrolled in the University and secondarily to high school students and to adults in the community. The latter are selected by the Clinic in accordance with training and research interests of the Clinic Staff.

The services are designed to assist individuals in the evaluation of their educational, personal, and social lives; diagnose academic difficulties and provide remedial measures such as study habits instruction and programmed instruction; and refer individuals to qualified agencies for assistance with problems not handled by the Clinic. Individual psychotherapy is available.

The Clinic also provides special assessments including: diagnostic measures prescribed by the School of Engineering and Applied Science, admissions tests for the University and for other selected educational institutions, and some selected assessments for business and industry.

*Fees.*—For students who are currently registered as degree candidates in the University, the fee is \$10; for students currently enrolled in the University but not as degree candidates, the fee is \$40; for graduates of the University, \$40; for community clients, \$65. Fees for specialized testing are dependent upon the services involved. All fees are payable at the Office of the Clinic.

### READING CENTER

*Director* Mary Ellen Coleman

The Reading Center, 2018 Eye Street, N.W., offers individual diagnostic and corrective services for all levels: primary, elementary, secondary, and adult. In addition special reading improvement classes are conducted on the high school and adult level.

A complete diagnosis includes psychological tests; vision, hearing, and dominance tests; and the various reading and spelling tests. Results are interpreted, and a written report is presented in conference with the parents or the individual.

The special reading classes for high school students and adults are offered throughout the year at stated intervals. Special classes for study skills and spelling are also available. Emphasis is placed on improvement of vocabulary, speed, comprehension, and study skills. Machines such as the tachistoscope, rate accelerator, and controlled reader are also used for increasing speed of comprehension.

*Reading Clinic.*—The fee for individual diagnosis is \$50; for individual instruction, \$7 a lesson; for semi-individual instruction, \$5 a lesson; for instruction in small groups with common reading difficulties, \$4.50 a lesson.



*Reading Improvement.*—Classes are offered for students on the high school, college, and graduate levels. Students are grouped according to needs, and emphasis is placed on vocabulary, study skills, spelling, and speed of comprehension. The fee for full-time students currently registered in the University is \$60 for twenty lessons; for other clients, \$90 for twenty lessons.

All fees are payable in advance at the Office of the Cashier.

### **SPEECH AND HEARING CLINIC**

*Director* C.W. Pettit

The Speech and Hearing Clinic, Lisner Auditorium, 730 Twenty-first Street, N.W., offers diagnostic and corrective work for children and adults with such communication difficulties as stuttering, lisping, cleft palate, cerebral palsy, aphasia, foreign accent, voice, articulatory, and hearing problems.

*Fees.*—There is no charge for the initial diagnosis. The fee for individual instruction is \$10 an hour; for group instruction, \$5 an hour. Fees are payable at the Office of the Cashier.

### **INTERNATIONAL STUDENTS**

*Adviser* W.A.R. Walker

International House, 2129 G Street, N.W., is the campus center for students from foreign countries. It serves also as the headquarters of the International Students' Society which seeks to promote international friendship and understanding by welcoming to its membership students from all countries, including those from the United States.

The Adviser to International Students has his Office in International House and is available for consultation each day throughout the school week.

### **VETERANS EDUCATION**

*Director* P.V. Bissell

The personnel of the Office of the Dean of Men act as advisers to veterans and war orphans and in a liaison capacity between the University and the Veterans Administration. This Office should be consulted concerning educational benefits before application is made to the Veterans Administration for certification. The Veterans Administration is at 2033 M Street, N.W., Washington, D. C. 20421.

### **WAR ORPHANS' EDUCATIONAL ASSISTANCE ACT (Chapter 35, Title 38, U. S. Code)**

A child of a person who died of a disease or injury incurred or aggravated while on active duty in the Armed Forces, or a child of a person who has a permanent total disability resulting from such service, or a child of a person who died as a result of such a disability may be eligible for educational assistance under this act, if certain age requirements are met. In the case of a child who has



not reached the age of majority, his guardian must make application for him to the Veterans Administration.

#### VOCATIONAL REHABILITATION (Chapter 31, Title 38, U. S. Code)

Disabled veterans desiring vocational rehabilitation under these laws should apply to the Veterans Administration for approval of their training objectives at least sixty days prior to registration.

#### VETERANS' READJUSTMENT BENEFITS ACT (Chapter 34, Title 38, U. S. Code)

A veteran who has served on active duty after January 31, 1955, or a person who is currently on active duty may be eligible for as much as 36 months of educational assistance under this act. Applications should be submitted to the Veterans Administration prior to registration.

#### STUDENT PLACEMENT OFFICE

*Placement Officer Gertrude McSurely*

The Student Placement Office, 2114 G Street, N.W., provides assistance to degree-seeking students and alumni seeking full-time, part-time, temporary, or permanent employment.

The Office maintains a registry of positions available in many fields, both locally and nationally, and refers qualified applicants for consideration. The Office administers the On-Campus Industrial and Government Recruitment Interview Program for seniors and graduate students, in which private companies, government agencies, service organizations, public school systems, and universities participate. Prospective teachers may establish permanent credentials files in the Student Placement Office. This service includes files for alumni seeking college and university faculty and administrative positions. The Office also provides individual counseling for students and alumni wishing career guidance.

#### RELIGIOUS LIFE

The University recognizes the contribution that religion makes to the life of its students and encourages them to participate in the various religious organizations of their own choice. Catholic, Jewish, and Protestant bodies sponsor these groups and form a link between the University and the religious community. The advisers of the religious organizations are available for counseling.

#### UNIVERSITY CHAPEL

Religious services in various traditions are provided regularly for the University community as announced.



## STUDENT UNION

The Student Union, 2125 G Street, N.W., and the Student Union Annex, 2127 G Street, N.W., are centers of student life on the University campus. The cafeteria on the first floor of the Union building serves breakfast, lunch, and dinner, as well as snacks. The second floor is reserved as a dining hall for resident students, and the third floor features a modern vendeteria and delicatessen. The University Ticket Office, on the first floor, handles the tickets for all nonathletic University events and outside events offering student rates. The Student Union Annex houses the Student Activities Office, which maintains information concerning student organizations and campus events. The meeting rooms and offices for the Student Council, other campus organizations, and student publications are also in the Annex. The facilities of the Student Union make it possible for the nonresident student to participate more fully in campus life.

## UNIVERSITY BOOK STORE

The University Book Store is in a separate building at the quad entrance to the Union. The Book store carries a wide selection of school supplies and sundry items in addition to text books for all courses.

## STUDENT ACTIVITIES

The offices of the Dean of Students, Dean of Men, and the Dean of Women are responsible for all nonacademic phases of student life, such as student activities, social life, and housing. The deans are available at all times for individual counseling concerning personal adjustment to university life. All student activities are coordinated through the Student Activities Office in the Student Union Annex. This Office operates under the direction of the Dean of Students.

## STUDENT GOVERNMENT

*Student Council.*—The University believes in encouraging the development of a sense of civic responsibility in its students by delegating to them such authority in student activities as is consistent with established policy and regulations. To this end, the organization of the University includes the Student Council, which, under the guidance of the Dean of Students, is responsible for the conduct of all student activities. The Student Council is elected annually by the student body.

*Committee on Student Life.*—The major function of the Committee on Student Life is to review, with authority to reverse, any act of the Student Council or of any other group engaged in extracurricular activities.

A secondary function is advisory. The Committee may offer recommendations to the Student Council on which the Council must act at its next regular meeting. It may also make recommendations to the President of the University at his request or on its own initiative.

Despite its broad powers, the Committee acts only when it believes that a vital interest of the University has been overlooked. The Committee, appointed annually by the President, is composed of 13 members, at least 6 of whom are students and at least 6 faculty members.



## ELIGIBILITY FOR STUDENT ACTIVITIES

Any student registered in the University is eligible to participate in nonathletic student activities of the University; however, a student having a scholastic average of less than 2.00 is not eligible to participate in student activities.

The rules and policies of the Southern Conference govern participation in intercollegiate athletics.

The control and administration of all student activities are outlined in a separate bulletin called "Information and Regulations Governing Student Activities."

## SPORTS

The University is a member of the Southern Conference and the National Collegiate Athletic Association. Its teams participate in intercollegiate contests in basketball, baseball, tennis, golf, rifle, soccer, and crew.

The University maintains a complete program of intramural sports for both men and women. The men's program is conducted by the Intramural Council. The Women's Athletic Association and Intersorority Athletic Board cooperate with the Department of Physical Education, Health, and Recreation for Women in conducting the women's intramural and informal extramural sports program in tennis, hockey, basketball, canoeing, rifle, swimming, golf, bowling, and badminton.

## PERFORMING ARTS

Students may participate in dance, drama, forensics, music, and radio broadcasting through the following organizations: Dance Production Groups I, II, III (Modern Dance) and Folk Dance; Enosinian Debating Society; Folk Music Society; Station WRGW; University Chorus, Madrigal Singers, Orchestra; and University Players. Each of these groups presents programs during the academic year.

With the cooperation of the Curator of Art, an annual student art exhibit is presented.

## ANNUAL EVENTS

*Recreation Program.*—The Student Council and the departments of Physical Education, Health, and Recreation arrange dances, movies, and trips at frequent intervals for all students.

*Concert Program.*—The Student Council sponsors a concert each semester at which nationally known entertainers perform.

*Orchestra Series.*—The University Orchestra offers a series of concerts throughout the academic year.

*Art Exhibits.*—The work of locally, nationally, and internationally known artists is shown in monthly exhibits in the Dimmock Gallery in Lisner Lounge.

*Homecoming.*—Scheduled about the middle of the fall semester, Homecoming is the primary festive period of the school year. It includes the Annual Homecoming Musical and other activities.



*Religion in Life Program.*—Special emphasis is given to the place of religion in contemporary society in this program of events during the fall and spring semesters.

*Holiday Season.*—The University traditionally greets the holiday season with appropriate ceremonies including the lighting of the Christmas tree, the singing of Christmas music, service projects, and the observance of a special Christmas service at the University Chapel.

*May Day.*—This is the traditional time for the award of honors in student activities. Mortar Board and Omicron Delta Kappa announce and present their new members.

## STUDENT ORGANIZATIONS

### HONOR SOCIETIES

*Phi Beta Kappa.*—A national honor society recognizing "outstanding intellectual capacity well employed" in the field of liberal arts and sciences. Senior and junior students who are candidates for the degree of Bachelor of Arts or Bachelor of Science in Columbian College and who have shown broad cultural interests, distinguished scholarly achievement, high character, general promise, and scholarly ideals may, to a number not exceeding 15 per cent of a class, be elected to membership by the Faculty members of the Alpha Chapter of the District of Columbia.

*Sigma Xi.*—A national scientific honor society, the purpose of which is to encourage original investigation in science, pure and applied. Outstanding graduate students in the sciences are eligible for full membership, and undergraduates who have shown marked ability in research may be elected to associate membership.

*Aesculapian Society.*—An honorary premedical fraternity.

*Alpha Kappa Delta.*—A national sociology society.

*Alpha Lambda Delta.*—A national fraternity established to encourage and reward high scholarship and attainment, membership in which is limited to those freshman women who attain a scholastic average of at least 3.50.

*Delphi.*—An intersorority honorary society.

*Delta Phi Epsilon.*—A foreign service fraternity.

*Delta Sigma Rho-Tau Kappa Alpha.*—A national forensic society.

*Gate and Key.*—An intrafraternity honorary society.

*Iota Sigma Pi.*—A national chemical society for women.

*Mortar Board.*—A national society for senior college women, stressing leadership, scholarship, and service.

*National Collegiate Players (Pi Epsilon Delta).*—A national drama honorary fraternity.

*Omicron Delta Kappa.*—A national fraternity emphasizing leadership in extracurricular activities.

*Order of Scarlet.*—A service honorary society for sophomore and junior men.

*Phi Epsilon Phi.*—A national botany fraternity.

*Phi Eta Sigma.*—A national fraternity, established to encourage and reward high scholarship and attainment, membership in which is limited to those freshman men who attain a scholastic average of at least 3.50.



- Phi Sigma Tau*.—A national philosophy honor society.  
*Pi Delta Epsilon*.—A national collegiate journalism fraternity.  
*Pi Gamma Mu*.—A national social science society.  
*Psi Chi*.—A national psychology fraternity.  
*Sigma Alpha Eta*.—A national speech and hearing fraternity.  
*Sigma Delta Pi*.—A national Spanish honor society.  
*Sigma Pi Sigma*.—A national physics fraternity.  
*Tassels*.—A service honorary society for sophomore women.

## PROFESSIONAL ORGANIZATIONS

Alpha Chi Sigma (chemistry), Alpha Kappa Psi (commerce and economics), Association for Hospital Administration, Student National Education Association, Phi Delta Gamma (graduate), Phi Delta Kappa (education), Pi Lambda Theta (education), Society for the Advancement of Management.

## SOCIAL FRATERNITIES

Alpha Epsilon Pi, Delta Tau Delta, Kappa Sigma, Phi Sigma Delta, Phi Sigma Kappa, Sigma Alpha Epsilon, Sigma Alpha Mu, Sigma Chi, Sigma Phi Epsilon, Sigma Nu, Tau Epsilon Phi, Tau Kappa Epsilon.

## SOCIAL SORORITIES

Alpha Delta Pi, Alpha Epsilon Phi, Chi Omega, Delta Gamma, Delta Phi Epsilon, Delta Zeta, Kappa Alpha Theta, Kappa Delta, Kappa Kappa Gamma, Phi Sigma Sigma, Pi Beta Phi, Sigma Delta Tau, Sigma Kappa, Zeta Tau Alpha.

## DEPARTMENTAL CLUBS

Anthropology Club, Art Club, Education Council, El Club Español, Enosinian Debating Society, Geology Club, German Outing Club, Le Cercle Français, Lester F. Ward Sociological Society, Phi Sigma Tau (philosophy), Russian Club, Women's Athletic Association.

## RELIGIOUS ORGANIZATIONS

Baptist Student Union, B'nai B'rith Hillel Foundation, Christian Science Organization, Eastern Orthodox Club, Episcopal Student Association, Lutheran Student Association, Newman Club, Unitarian Universalist Club, United Christian Fellowship, Wesley Foundation, and a Religious Council comprised of representatives of all religious organizations.

## STUDENT PUBLICATIONS

*The Cherry Tree* (the yearbook), *The University Hatchet* (weekly newspaper), *The Potomac* (literary magazine).



## OTHER ORGANIZATIONS

Alpha Theta Nu (scholarship winners), Big Sisters, Cheerleaders, Chess Club, Colonial Boosters, Ice Hockey Club, Interfraternity Council, International Students' Society, Intersorority Athletic Board, Junior Panhellenic Association, Old Men, Residence Hall Councils, Senior Panhellenic Association, Station WRGW, Student Council, University Pep Band, Young Democrats Club, Young Republican Club.

## PRIZES

*Alpha Chi Sigma Prizes.*—A *Handbook on Chemistry and Physics* awarded annually by Alpha Pi Chapter to each of three students who carry at least 18 semester hours during the freshman year and attain the highest averages in freshman chemistry.

The name and year of graduation of the student who has attained the highest quality-point index in courses in chemistry is inscribed on a bronze plaque. The winner must have had at least 16 hours in chemistry including the final semester at this University.

*Alpha Delta Pi Prize.*—Offered annually by Alpha Pi Chapter to the woman in the junior class with the most outstanding record in scholarship, extracurricular activities, and service to the University.

*Alpha Kappa Psi Prize.*—A key, awarded annually by Beta Mu Chapter to the male student who has completed 90 semester hours at this University and attained the highest average grade in business administration, economics, international business, public accounting, and public finance. The name of the winner and the year of the award is engraved on a plaque in the Office of the Dean of the School of Government and Business Administration.

*American Institute of Chemists Prize.*—A medal and a one-year subscription to *The Chemist* awarded annually to the graduating student majoring in chemistry who excels in scholarship, integrity, and leadership.

*Byrne Thurtell Burns Memorial Prize.*—Awarded to the senior majoring in chemistry who shows the greatest proficiency in organic chemistry, as evidenced by a comprehensive examination, and who possesses such qualifications of mind, character, and personality as to give promise of future achievement.

*Wilbur J. Carr Prize.*—A \$200 prize, established in 1962 by Edith K. Carr, former Trustee of the University, in memory of her distinguished husband, who was graduated from the School of Comparative Jurisprudence and Diplomacy in 1899. It is awarded annually to that man in the graduating class of the University who has demonstrated outstanding ability in his study of international affairs and who has given evidence of possessing in marked degree the qualities which produce the good citizen and the dedicated public servant.

*Chi Omega Prize.*—Awarded annually by Phi Alpha Chapter to the woman in the graduating class with the highest record in economics, sociology, political science, and history; combined with general excellence.

*The Columbian Women Prize.*—Awarded to the senior woman who in her undergraduate life has most nearly fulfilled the objectives of Columbian Women.

*Ernest Connolly Memorial Award.*—Awarded by the Washington Personnel Association to an outstanding graduating senior in business administration who shows general excellence in studies, demonstrates superiority in one or more



courses in personnel administration, and shows qualities of leadership or promise through extra-scholastic activities.

*John Henry Cowles Prizes.*—Two prizes of \$100 each, established by John H. Cowles, Grand Commander of the Supreme Council of Thirty-third Degree (Mother Council of the World) of the Ancient and Accepted Scottish Rite of Freemasonry, Southern Jurisdiction of the United States of America. Awarded annually to the senior in the School of Government and Business Administration and to the senior in the School of Public and International Affairs with the highest academic averages.

*DeWitt Clinton Croissant Prize.*—Awarded annually to the undergraduate student enrolled in a course in drama or active in University dramatics who submits to the English Department the best essay on drama or the theater.

*E. K. Cutter Prize.*—Established by Marion Kendall Cutter "for excellence in the study of English." Awarded to the member of the graduating class whose record in English, combined with general excellence, shows most marked aptitude for and attainment in English studies.

*Isaac Davis Prizes.*—Awarded annually to the three seniors who made the greatest progress in public speaking while enrolled in the University. Awards are to be determined by a public-speaking contest in which the participants deliver original orations. Only members of the senior class of Columbian College of Arts and Sciences who are candidates for the degree of Bachelor of Arts or Bachelor of Science are eligible to compete.

*Delta Gamma Prize.*—Awarded annually by Beta Rho Chapter to the woman who, at the end of her freshman year, has the most outstanding record in scholarship, extracurricular activities, and service to the University.

*Delta Zeta Prize.*—Awarded annually to a full-time lower-division student for excellence in Biological Sciences 2.

*Henry Grattan Doyle Memorial Prize.*—Established in memory of Henry Grattan Doyle, a former Dean of Columbian College, and awarded annually to an outstanding senior student for excellence in Spanish.

*Elton Prize.*—Established by the Reverend Romeo Elton, of Exeter, England, and awarded annually to the student with the highest average in the most advanced course in the Greek language and literature.

*Jesse Frederick Essary Prize in Journalism.*—A prize of \$200 established by Helen Essary Murphy and awarded annually to a student who has given promise of sound citizenship and who submits the best printed and published evidence of ability in "forthright reporting" and good journalistic writing, in a student publication or elsewhere.

*Joshua Evans III Prize in Political and Social Sciences.*—A memorial prize of \$100 "established by friends because of an outstanding life." Awarded annually to that man in the graduating class "who has demonstrated his signal ability in the social and political sciences and who has given promise of the interpretation of that ability in good citizenship among his fellows."

*Willie E. Fitch Prize.*—Established by James E. Fitch in memory of his son. Awarded annually to a senior student for the best examination in chemistry.

*Alice Douglas Goddard Prize.*—A memorial established by Frederick Joseph Goddard, of Georgetown, D. C. Awarded annually to the upper-division student making the highest average in American literature.

*Edward Carrington Goddard Prize.*—Established by Mary Williamson Goddard, Alice Douglas Goddard, and Frederick Joseph Goddard, of Georgetown,



D. C., in memory of Edward Carrington Goddard, class of '81. Awarded to the junior or senior student making the highest average in the French language and literature.

*Morgan Richardson Goddard Prize.*—A memorial established by Mary Williamson Goddard, Alice Douglas Goddard, and Frederick Joseph Goddard, of Georgetown, D. C. Awarded to the junior or senior student making the highest average in the following fields: business administration, economics, international business, and public accounting.

*Gardiner G. Hubbard Memorial Prize in United States History.*—Established by Gertrude M. Hubbard in memory of her husband and awarded annually to that member of the graduating class majoring in history who has maintained the highest standing in courses in United States history.

*Kappa Kappa Gamma Prize.*—Awarded annually to a full-time lower-division student for excellence in Biological Sciences 1.

*Craig Sterling Logan Memorial Prize.*—Established by Washington City Rho Chapter of Sigma Alpha Epsilon. A plaque awarded annually to an outstanding freshman man of high academic achievement who has participated in extracurricular activities for the betterment of the University.

*Mortar Board Prize.*—A silver cup awarded annually to the woman student in the sophomore class having an average of B or higher and the most outstanding record in activities.

*Vivian Nellis Memorial Prize.*—Awarded to a student in the English Department who has shown special promise in the field of creative writing.

*Old Men Prize.*—A plaque awarded annually by the Old Men Board to a man in the junior class who has made outstanding contributions to student activities.

*Omicron Delta Kappa Prize.*—A plaque awarded annually by Alpha Delta Circle to "that member of the senior class who throughout his course has done the most constructive work in the furtherance and upbuilding of the University student activities."

*Order of Scarlet Prize.*—Awarded annually by the Board of Governors of Order of Scarlet to that member of the sophomore class who has the most outstanding record in extracurricular activities and service to the University.

*Panhellenic Association of Washington, D. C., Prize.*—A trophy to be awarded to the Panhellenic Sorority maintaining the highest yearly scholastic average at the University for the previous year.

*Phi Delta Kappa Prize.*—Awarded annually by Beta Gamma Chapter to the outstanding senior man in the teacher education program in the School of Education.

*Phi Eta Sigma Prize.*—A choice book selected from the field of the recipient's major, awarded annually by The George Washington University Chapter to the male student attaining the highest scholastic average in his first full semester of work. The winner's name is engraved on a plaque in the Office of the Dean of Columbian College of Arts and Sciences.

*Pi Beta Phi Prize.*—Awarded annually by the District of Columbia Alpha Chapter to the woman member of the senior class who throughout her college course has done the most constructive work in the promotion of student activities among the women of the University.

*Pi Lambda Theta Prize.*—Awarded annually by Alpha Theta Chapter to the outstanding senior woman in the teacher education program in the School of Education.



## COLUMBIAN COLLEGE OF ARTS AND SCIENCES

Dean C.D. Linton

Associate Dean G.M. Koehl

Assistant Deans J.L. Metivier, Jr., R.C. Rutledge, W.L. Turner

### FACULTY—ACADEMIC YEAR 1966-67

*Professors* J.G. Allee, Jr., Joseph Aschheim, D.G. Barry (*Visiting*), Jay Barton II (*Visiting*), J.W. Brewer, Michael Brewer, H.F. Bright, Murray Brown, R.G. Brown, A.E. Burns, Elizabeth Burtner, W.E. Caldwell, G.V. Carroll, T.F. Carroll (*Visiting*), I.H. Cisin, W.G. Clubb, J.H. Coberly, C.W. Cole, J.W. Coughlan, Milton Crane, Clarence Danhof, R.H. Davison, V.J. DeAngelis, A.H. Desmond, Julian Eisenstein, J.L. Finan, C.E. Galbreath, Bernard Gordon (*Visiting Research*), Wood Gray, R.G. Hanken, I.B. Hansen, R.C. Haskett, G.F. Henigan, Jr., P.H. Highfill, Jr., H.H. Hobbs, Thelma Hunt, Herbert Jehle, E.H. Johnson, R.G. Jones, Norman Kaplan, E.L. Kayser, J.W. Kendrick, J.C. King, D.C. Kline, G.M. Koehl, W.H. Kraus, Solomon Kullback, J.F. Latimer, Thelma Z. Lavine, H.L. LeBlanc, L.P. Leggette, W.K. Legner, B.I. Levy, J.B. Levy, E.J.B. Lewis, C.D. Linton, T.P.G. Liverman, Kurt London, W.A. MacDonald, G.E. McSpadden, H.M. Merriman, Charles Milton (*Research*), R.H. Moore, Edith Mortensen, J.N. Mosél, S.C. Munson, C.R. Naeser, N.D. Nelson, Benjamin Nimer, H.W. Olson (*Visiting*), T.G. Overmire (*Visiting*), H.J. Parry (*Visiting*), T.P. Perros, C.W. Pettit, E.L. Phillips, R.E. Purcell, J.P. Reesing, Jr., J.W. Robb, Mario Rodriguez, M.W. Schein (*Visiting*), William Schmidt, Wilson Schmidt, R.P. Sharkey, Loretta Stallings, R.W. Stephens, E.L. Stevens, C.T. Stewart, Jr., Raphael Supervía, Geza Teleki, R.B. Thompson, B.D. Van Evera, L.A. Vigneras, R.C. Vincent, R.D. Walk, R.H. Walker, Jr., D.S. Watson, R.L. Weintraub, D.G. White, R.K. White, N.A. Wiegmann, R.E. Wood, S.N. Wrenn, Helen Yakobson

*Adjunct Professors* J.C. Broderick, E.G. Kauffman, J.W. Pierce

*Associate Professors* Fred Abrams, Caroline Adams, J.J.W. Baker (*Visiting*), Otto Bergmann, Lee Bielski, L.S. Bowling, Sr., S.J. Brown, J.F. Burks, A.E. Claeysens, Jr., A.G. Coates, I.W. Deep (*Visiting*), D.S. Douglas, Nicolae Filipescu, Roland Fleischer, J.A. Frey, Helmuth Fuchs (*Visiting*), P.F. Gallagher, R.N. Ganz, Jr., Lyndale George, F.S. Grubar, C.J. Herber, P.P. Hill, J.W. Hillis, H.C. Hinton, Mary Holman, Ching-Yao Hsieh, Eva Johnson, W.R. Johnson, J.M. Kaper (*Research*), R.W. Kenny, Hewitt Kenyon, William Key, Virginia Kirkbride, A.D. Kirsch, F.C. Kurtz, B.J. Leach, L.P. Leite, H.W. Lilliefors, W.L. Marsh, G.E. Mazzeo, G.E. McCandlish, Muriel Mc-



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*Adjunct Professors* J.C. Broderick, E.G. Kauffman, J.W. Pierce

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Clanahan, J.L. Metivier, Jr., P.J. Mika, C.C. Mondale, Kittie Parker, L.B. Platt, Nadine Popluiko, Francisco Prats, H.M. Sachar, R.H. Schlagel, L.E. Schlesinger (*Research*), Chung-wen Shih, R.H. Shumway, F.R. Siegel, W.A. Smith, Jeanne Snodgrass, George Steiner, Klaus Thoenelt, W.L. Turner, C.E. Tuthill, R.Z. Vause, Dewey Wallace, Jr., S.R. Westerlund, R.C. Willson, Elizabeth Wright, H.E. Yeide, Jr., A.J. Zuchelli

*Assistant Professors* Donna Abbey, Martha Adem, Don Allensworth, A.D. Andrews II, A.S. Banks (*Research*), Ruth Bari, Bette Barton, R.R. Bonato (*Research*), A.D. Britt, Thomas Burns, E.A. Caress, Gayle Clapp, Mary Ann Coffland, G.F. Conner, T.F. Courtless, Linda DePauw, C.F. Elliott, Norma Enochs (*Visiting*), B.C. Field, M.G. Gallagher, I.I. Glick, M.D. Green, W.B. Griffith, R.A. Hadley, Gloria Hammack, Lois Hammer, J.M. Harrison, Dagmar Henney, Robert Honeygosky, S.J. Hunter, G.P. Huvé, C.T. Ireland, Irving Katz, N.K. Khatcheressian, David Kieserman, Ruth Krulfeld, R.K. Lewis, W.F.E. Long II, H.T. Lu, Ruth McKay, F.L. Minn, Margaret Montzka, J.A. Morgan, Jr., Subramaniam Moryadas, Elizabeth Neyman, Mary Norton, G.A. Olkhovsky, Chei-Min Paik, Robert Parris, Henry Peskin, C.H. Pfuntner, Judith Plotz, J.A. Quitslund, R.W. Rafuse, Jr., C.B. Reed, Joan Regnell, Bernard Reich, Charles Rice, R.M. Riggs, Felicia Rochon, J.R. Roman, Jr., Joan Rubin, R.C. Rutledge, Paul Sadagursky, K.R. Sanders, Victoria Sandor, L.C. Schaefer, S.O. Schiff, Lois Schwoerer, L.G. Seeger, D.E. Silber, M.R. Skigen, Carl Steiner, R.E. Stockton, E.A. Stone, Margaret Sullivan, R.H. Tanck (*Research*), D.H. Teller, R.E. Thomas, L.J. Tilly, G.C.Y. Wang, R.L. Williams, Maida Withers

*Instructors* Janet Beimborn, Dorothy Betz, Lydia Blanchard, Diana Bronte, Elizabeth Burkley, Joan Caton, Janet Collins, Anne Cordero, Janet Dearcopp, C.G. Dease, Barbara Dunham, Norma Engberg, Mohammad Fatemi, J.L. Gabriel, H.I. Gates, J.R. Greenya, F.O. Griffith, D.A. Gustafson, Lilien Hamilton, Julia Hicks, R.J. Hornfeck, D.R. Janis, Nancy Johnson, J.K. Kern, T.W. Koontz, S.J. Korcheck, Nicholas Letsou, Mary McHenry, James McPherson, Rhoda Miller, Gertrude Mitchell, Maria Oden, Nancy Powelson, George Rabchevsky, Margaret Reuss, William Rucker, Herbert Sims, H.K. Skramstad, Jr., Nan Smith, Irene Thompson, J.L. Tropea, Cecelia Uribe, L.G. Usiskin

#### COMMITTEES\*

##### Lower Division

##### THE DEAN'S COUNCIL †

1967: R.G. Jones, Elizabeth Neyman  
1968: J.M. Harrison, R.H. Schlagel  
1969: D.S. Douglas, D.E. Silber

##### COMMITTEE ON ADMISSION AND ADVANCED STANDING

G.M. Koehl (*Chairman*), A.D. Kirsch, E.J.B. Lewis, T.P. Perros, R.C. Rutledge, R.L. Williams

\* The Dean of Columbian College of Arts and Sciences is an ex officio member of all committees.  
† Elected by the Faculty.



## COMMITTEE ON SCHOLARSHIP

W.L. Turner (*Chairman*), Barbara Dunham, R.G. Hanken, J.M. Harrison,  
W.F.E. Long II, G.E. Mazzeo, R.C. Vincent

## ADVISORY COMMITTEE

G.M. Koehl (*Chairman*), Barbara Dunham, Lilien Hamilton, Margaret  
Montzka, J.R. Roman, Jr., R.C. Rutledge, W.L. Turner, R.C. Vincent, S.R.  
Westerlund, R.L. Williams

## Upper Division

## THE DEAN'S COUNCIL \*

1967: C.J. Herber, J.N. Mosél  
1968: R.N. Ganz, B.J. Leach  
1969: J.F. Burks, Thelma Z. Lavine

## COMMITTEE ON ADMISSION AND ADVANCED STANDING

C.W. Cole (*Chairman*), Edith Mortensen (*Secretary*), P.P. Hill, R.G. Jones,  
D.G. White

## COMMITTEE ON THE USE OF CORRECT ENGLISH

R.H. Moore (*Chairman*), J.G. Allee, Jr., G.F. Henigan, Jr., Muriel McClanahan,  
R.C. Willson

## COMMITTEE ON SCHOLARSHIP

W.F.E. Long II (*Chairman*), J.A. Frey, H.M. Merriman, R.E. Purcell, S.N.  
Wrenn

## COMMITTEE ON STUDIES

C.D. Linton (*Chairman*), A.H. Desmond, P.H. Highfill, Jr., H.L. LeBlanc, Wil-  
liam Schmidt

## COMMITTEE ON GRADUATE FELLOWSHIP PROGRAMS

J.C. King (*Chairman*), J.F. Latimer, B.J. Leach, R.W. Stephens, A.J. Zuchelli

## INTRODUCTION

Since its founding in 1821, Columbian College of Arts and Sciences, the liberal  
arts college of the University, has continued to expand and develop with the

\* Elected by the Faculty.



city of Washington. Its central situation makes participation in the life of the Nation's Capital convenient for resident students. The cosmopolitan nature of the student body reflects the atmosphere of a great world capital. Because the students come from the fifty states and from eighty-five foreign countries, class discussions and casual student conversations are enriched by a challenging variety of viewpoints.

Columbian College offers programs leading to the degrees of Bachelor of Arts, Bachelor of Science, and Bachelor of Science in Medical Technology, prelegal and premedical programs; the first two years of the professional programs in Education, in Government and Business Administration, and in Public and International Affairs; and a two-year terminal curriculum in Accounting.

All entering freshmen and transfer students of less than junior class standing, except those in the fields of engineering and applied science, enter the lower division of Columbian College. The division is primarily concerned with providing (1) the personal and academic guidance needed in adjusting to college life and in selecting and preparing for a major field and (2) the broad cultural foundations in language and literature, science, and social studies on which major-field specialization in the upper division is built.

During the junior and senior years the student is in the upper division, where he is guided by his major adviser. A student who plans to continue toward a Master's degree should plan his Bachelor's program so that it will prepare him for the graduate work of his interest.

### THE COLUMBIAN COLLEGE PROGRAM

The Columbian College program is a contemporary application of the historic liberal arts tradition. Its purpose is to enable the student to develop both his particular abilities and his general awareness as a human being. It demands of the student a thorough acquaintance with one major area of learning and at the same time an understanding of how that specialization fits into the larger context of the scientific, social, and moral problems which confront modern man. It stresses not merely expertness but that broadly enlightened expertness which encourages its graduates to grow through the years in ability and wisdom.

### ENTRANCE REQUIREMENTS

Good character and an academic background appropriate for the program of studies contemplated are required.

### LOWER DIVISION

Requirements for admission to the freshman class are as follows:

1. An acceptable certificate of graduation from an accredited secondary school, showing at least fifteen units\* which must include four years of English; at least two years of one foreign language; two years of science, preferably with laboratory instruction; two years of social studies, one of which must be American history; and two years of college preparatory mathematics. One unit of

\* A unit represents a year's study in a secondary school subject, including in the aggregate not less than 120 sixty-minute periods, or the equivalent, of prepared classroom work.



algebra, or the equivalent, is prerequisite to courses in chemistry and statistics; and one unit in algebra and one unit in plane geometry, or the equivalent, are prerequisite to courses in mathematics and physics.

2. The principal's statement that the applicant is prepared to undertake college work.

3. College Entrance Examination Board scores must be submitted on the Scholastic Aptitude Test, the English Composition Achievement Test, and two additional achievement tests in subjects reflecting the applicant's major interests.

It is recommended that the examination be taken in December or January. Scores on tests taken in the junior year may be submitted. Arrangements for tests is the responsibility of the applicant and should be made with the Educational Testing Service, 20 Nassau Street, Princeton, N. J. 08540; or 1947 Center Street, Berkeley, Calif. 94704, not less than one month before the date of the test. In applying for the test, the applicant should specify that the scores be sent to the Office of Admissions, The George Washington University, Washington, D. C. 20006.

The Committee on Admission and Advanced Standing will consider the adequacy of the qualifications of an applicant who, because of unusual circumstances, does not present all the formal requirements stated above. The Committee may prescribe appropriate scholastic-aptitude tests of the University.

#### UPPER DIVISION

A quality-point index of 2.00 or higher in the work of the freshman and sophomore years is required for admission to degree candidacy in the upper division.

*Bachelor of Arts.*—Sixty-four hours of academic work based on the *Arts and Letters* curriculum in the lower division, or the equivalent.

*Bachelor of Science.*—Sixty-four hours of academic work based on the *Science* curriculum in the lower division, or the equivalent.

*Bachelor of Science in Medical Technology.*—Sixty-four hours of academic work including Biological Sciences 1-2, Chemistry 11-12, 22, and 51 or the equivalent.

#### SPECIAL STUDENTS

Some students not immediately eligible for unqualified degree candidacy may be admitted as special students to demonstrate ability in a prescribed program, or to make up deficiencies.

The schedule of a special student consists of courses required in the curriculum to which he wishes to transfer. The choice of courses must be approved by the adviser. If the student has not completed the language requirements of his curriculum at the time of admission, he must include 3 semester hours of language in each 12 hours of work until the requirement is met. Second-group courses may not be taken unless all first-group requirements have been met or are being met concurrently.

All special students are expected to consult with an adviser at least twice a semester.

Upon satisfactory completion of the prescribed program, the student is automatically assigned full status in the appropriate (lower or upper) division of the College. Work satisfactorily completed as a special student is normally applicable to the appropriate degree.



A student who fails to maintain a quality-point index of 2.00 may be dropped.

## REGULATIONS

*Regulations regarding ADMISSION, REGISTRATION, FEES AND FINANCES are stated on pages 15-26; other University regulations, on pages 33-36.*

## ACADEMIC WORK LOAD

A full-time student not on probation may take ordinarily not more than 17 semester hours. A student employed more than 20 hours a week who is not on probation may take not more than 10 hours.

The amount of work taken by a student on probation is limited by the Committee on Scholarship.

A full-time student whose quality-point index is 3.50 or higher may take not more than 19 hours. An employed student who meets the same standard may take not more than 12 hours.

A student who accepts employment after registration or at any time during a semester must report that fact immediately to the Dean so that his program may be adjusted, if necessary.

## ATTENDANCE

The student is held responsible for all the work of the course in which he is registered, and all absences must be excused by the instructor in charge before provision is made for the student to make up work missed. Excessive absence in any course will lead to loss of credit in that course, even though other requirements, such as tests, term papers, and examinations, are met.

A student whose absences from any class, whether excused or unexcused, are in excess of one-fourth of the total number of class periods will receive the grade of *F* for the course, except by special ruling of the Dean's Council on recommendation of the instructor.

## USE OF CORRECT ENGLISH

The use of correct English, oral and written, is required in all courses. Any student whose English in any course whatever is deemed unsatisfactory may be reported by the instructor to the Dean and to the Committee on the Use of Correct English. The Chairman of the Committee may assign supplementary work, without academic credit, varying in amount with the needs of the student. If the work prescribed is equivalent to a course, the regular tuition fee is charged. The granting of a degree may be delayed by failure to make up any such deficiency in English to the satisfaction of the Committee and the Dean.

## HONORS

*Lower Division Honor Roll.*—The name of every lower division student who has a quality-point index of 3.50 or higher on the basis of his complete record



at this University is placed on the honor roll. To be eligible, the student must have completed no less than 15 semester hours. (A place on the honor roll does not necessarily mean that the student will receive honors upon graduation.)

*Dean's List.*—The name of every student who has a quality-point index of 3.50 or higher on a minimum of 15 semester hours of work taken in any one semester is placed on the Dean's List for that semester.

#### PROBATION

The student must maintain a quality-point index of at least 2.00 or be placed on probation. He remains on probation as long as his index is below 2.00. The student whose average is 2.00 or below for work undertaken during this probationary period is suspended. The student whose over-all quality-point index is still below 2.00 but whose average for work undertaken during the probationary period is above 2.00 may be continued on probation by the Committee on Scholarship.

#### SUSPENSION

The student whose index falls below 1.50 or who is placed on probation for a third semester, whether successive or after an interval, is suspended.

A student suspended for poor scholarship may apply for readmission after an interval of one calendar year. He must then submit evidence to the Committee on Admission and Advanced Standing that during his absence from the University he has so conducted himself as to indicate that he will profit by readmission. A student suspended twice for poor scholarship will not be readmitted.

*Mid-semester Warning.*—At the end of the seventh week of each semester, instructors file in the Office of the Dean the names of freshman and sophomore students who are doing work of *D* grade or lower. A notice of Warning is sent to the student and a copy filed with the appropriate adviser. A "warning" constitutes notice to the student that he must consult his instructor and adviser at the earliest opportunity.

The foregoing scholarship rules are applied to a student with a limited schedule only when he has undertaken a minimum of 15 semester hours.

#### CORRESPONDENCE AND HOME-STUDY COURSES

No credit is given for work done by correspondence or in home-study courses.

#### CLASSIFICATION OF STUDENTS

A *freshman* is a student who is in the process of completing 32 semester hours, including 18 hours of his curriculum requirements.

A *sophomore* is a student who has completed between 32 and 64 hours, including 18 hours of his curriculum requirements.

A *junior* is a student who has completed between 64 and 94 hours and filed the declaration of his major, approved by his adviser, in the Office of the Dean.



A *senior* is a student who has completed between 94 and 124 hours, including at least 6 hours of second-group work in his major.

A *special student* is a student not immediately eligible for unqualified degree candidacy but admitted to Columbian College to demonstrate ability in a prescribed program or to make up deficiencies.

## The Lower Division

A STUDENT IN THE LOWER DIVISION is given the opportunity of taking a wide range of liberal arts subjects—humanities, foreign languages, sciences, social studies—both as a means of laying the groundwork for the more concentrated major-field study in the upper division and as a means of determining what academic area is best adapted to his interests and aptitudes. In order to insure that these general educational requirements are met, the student is not permitted to anticipate major-field special courses until all basic areas are covered.

### ENTRANCE REQUIREMENTS

Entrance requirements of the lower division are stated on pages 56–58.

### ADVISORY SYSTEM

Each student in the lower division is provided with two kinds of counseling. *Academic* advising is performed by members of the Faculty selected for their





knowledge of freshman-sophomore requirements and programs, and each student makes up his program in consultation with the adviser assigned to him before registration. *Personal* counseling is available to all students, particularly those who find it difficult to adjust to college life. Each student in the residence halls meets from time to time with his Faculty Associate, a member of the Faculty chosen by students and appointed by the Vice President for Academic Affairs to consult with small groups of students on personal and nonacademic matters. Further personal assistance is always available through the offices of the Dean of Men and the Dean of Women. All students are encouraged to maintain close contact both with their academic and their nonacademic Faculty advisers.

Students who intend to transfer after the sophomore year to the School of Education, the School of Government and Business Administration, or the School of Public and International Affairs are assigned special advisers to assist them in planning their programs.

An academic warning system permits early attention to students whose work falls below required standards. In such cases, students are required to consult regularly with their advisers. On request, copies of academic warnings or probation notices may be sent to parents or guardians, who are themselves welcome to meet with members of the advisory staff.

#### REQUIRED PLACEMENT EXAMINATIONS

*English.*—Students whose College Board English Composition Achievement Test scores suggest inadequate preparation may be assigned to English 1x or may be tested in vocabulary, spelling, grammar, standard usage, and writing skill, before placement in either English 1x or 1. Students whose scores indicate marked superiority will be allowed to waive the English 1 requirement.

*Foreign Languages.*—A standardized placement examination is required of all entering students who wish to continue in college the language begun in high school (Chinese, French, German, Italian, Russian, or Spanish). Upon completion of the examination, assignment is made to the appropriate course.

*Mathematics.*—Special placement examinations are required of all entering freshmen who expect to register for courses in mathematics. Students showing deficiencies may be assigned to remedial work.

#### FIRST- AND SECOND-GROUP COURSES

A freshman or sophomore may take second-group courses (courses numbered 101–200) only with the written permission of the Instructor and of the Dean.\* A student is not permitted to postpone a required first-group course to take a second-group course for elective credit. The principle that first-group courses must be taken in the freshman and sophomore years, and advanced courses in the junior and senior years, is rigidly adhered to in approving student programs. Freshmen and sophomores on probation may take second-group courses only with the written permission of the Committee on Scholarship.

\* Students enrolled in the two-year terminal curriculum in Accounting may take those second-group courses which are specified as part of their freshman-sophomore curricula without obtaining the written permission of the Instructor or the Dean.



## PROFESSIONAL COURSES

Except for students intending to apply for the combined degrees of Bachelor of Arts and Doctor of Medicine or the degree of Bachelor of Science in Medical Technology, not more than 12 hours of professional courses, i.e., courses offered in units of the University other than Columbian College, may be included in the 124 hours required for the Bachelor's degrees in Columbian College. Students electing professional courses under this rule must obtain the approval of the Dean before registration.

## PHYSICAL EDUCATION REQUIREMENT

Freshmen and sophomores (except those enrolled in the Physical Education curricula) are required to take Physical Education 1-2 and 11-12 unless they are registered for less than 9 semester hours or unless regular employment during the day makes it necessary to take all classes during the evening hours.

Any other exemptions will be granted only upon written petition which has been recommended by the Physical Education, Health, and Recreation department concerned and approved by the Dean. Students exempt from the physical education requirement must substitute four hours of elective.

A student entering the University with advanced standing is not exempt from the physical education requirement unless he has satisfactorily met the requirement elsewhere.

The required medical and physical examinations, as specified by the departments of Physical Education, Health, and Recreation, will be arranged at the beginning of each semester.

## FOREIGN LANGUAGE REQUIREMENT

In curricula requiring foreign languages a student must complete satisfactorily the equivalent of two years of college work in a single foreign language. (Chinese, French, German, Greek, Italian, Latin, Russian, Spanish).

A student offering for admission four acceptable high school units of a single foreign language, or the equivalent, is not required to take any foreign language.

A student who offers less than four units and wishes to meet the requirement by continuing in the same language must take the language placement test.

In general, one year of high school language is considered equivalent to one semester of college language.

In some instances foreign languages are required or recommended as preparation for advanced work. The student should consult his adviser so that appropriate foreign languages may be included, when necessary, in his lower division program.

## ENGLISH REQUIREMENT

Entering students registered in the arts and sciences curricula must follow the sequence of English 1 or 1x, both halves of one of the introductory literature courses, and English 4. This does not apply to students transferring to these curricula or students registering in the preprofessional or terminal curricula.



## EXAMINATIONS FOR WAIVING CURRICULUM REQUIREMENTS\*

A required course may be waived and admission to an advanced course granted by the passing of a waiver examination. Passing this examination does not entitle the student to any hours of credit. Written request to take the examination should be made to the Dean and the required fee paid at the Office of the Cashier before taking the examination.

## TRANSFER FROM LOWER DIVISION TO UPPER DIVISION

On completion of a lower division curriculum of 64 or more semester hours with a quality-point index of 2.00 or higher, the student must apply in the Office of the Dean for transfer to the upper division.

## LOWER DIVISION CURRICULA

Each of the following curricula comprises the first two years of a standard four-year college course.

All curricula in this group lead to the degree of Associate in Arts. Students wishing to receive this degree must apply at the Registrar's Office at the time of registration for the fourth or last semester. The last 15 semester hours must be spent in residence in Columbian College.

## IN PREPARATION FOR THE UPPER DIVISION OF COLUMBIAN COLLEGE:

## Arts and Letters

First two years of the Bachelor of Arts curriculum:

	Semester Hours
Comp & Lit: English 1 or 1x; 51-52, 71-72, 91-92, Classical Languages 71-72, French 51-52, German 51-52, Slavic 91-92 or 93-94, or Spanish 51-52; English 4.....	12
† Foreign Lang: .....	12
‡ PE: .....	4
Science: Biological Sciences 1-2; Chemistry 3-4, 11-12; Geology 1-2; or Physics 1-2 (or 1 and 30 for prephysics majors)....	6-8
Social Studies: Anthropology 1-2; Economics 1-2; Geography 51, 52; History 39-40, 71-72; Political Science 5-6; or Sociology 1-2 .....	6
§ Elective: .....	22-24
Total.....	64

\* This provision does not apply to the premedical student, all of whose required premedical work must be taken in a recognized college of arts and sciences.

† See page 62 for foreign language requirement.

‡ See page 62 for physical education requirement.

§ It is suggested that electives include one of the following courses: Art 31-32, 71-72; Music 3-4; Philosophy 51-52; Religion 9-10, 21, 59-60.

The student should obtain the advice of his major department as to proper prerequisite and collateral courses for the intended major.

Credit may be given for a limited number of courses elected in Physical Education, Health, and Recreation, with the approval of the Dean.



**Science**

First two years of the Bachelor of Science curriculum:

	Semester Hours
Comp & Lit: English 1 or 1x; 51-52, 71-72, 91-92, Classical Languages 71-72, French 51-52, German 51-52, Slavic 91-92 or 93-94, or Spanish 51-52; English 4.....	12
Foreign Lang: French, German, Russian, or nonscience elective.....	12
NOTE.—A reading knowledge of French, German, or Russian is required. This may be satisfied by French 4 or 6, German 4, or Russian 4 or 8, or by special examination.	
Math: Mathematics 3, 6, or electives.....	6
NOTE.—The Mathematics 3 requirement may be satisfied by offering two years of high school algebra, acceptable for admission; the Mathematics 6 requirement may be satisfied by offering one-half year of high school trigonometry acceptable for admission.	
* PE: .....	4
Science: Biological Sciences 1-2.....	8
Two full-year courses are required, to be chosen from Chemistry 11-12, Geology 1-2, and Physics 1-2 (or 1 and 30 for prephysics majors).....	
Social Studies: Anthropology 1-2; Economics 1-2; Geography 51, 52; History 39-40, 71-72; Political Science 5-6; or Sociology 1-2 .....	14-16
† Elective: .....	6
	0-2
Total.....	64

**Premedical**

Premedical students may follow either the Arts and Letters or the Science curriculum above in fulfilling the first 60 semester hours of the premedical requirement. Each premedical program must be approved by the premedical adviser. A minimum of 90 semester hours applicable toward a degree in an approved College of Arts and Sciences including:

1. **Biology:** 8 semester hours, including laboratory, of general biology or zoology.
  2. **Chemistry:** 8 semester hours of general inorganic chemistry and the equivalent of a one-year course in organic chemistry, both including laboratory.
  3. **Embryology:** a minimum of 2 semester hours of vertebrate embryology, including laboratory. Under unusual circumstances, this requirement may be met by a course in biology which includes a substantial portion of embryology.
  4. **English:** 6 semester hours of composition and literature.
  5. **Physics:** 8 semester hours, including laboratory.
- While not required, a college course in mathematics is strongly recommended.

With the exception of these specific requirements applicants are urged to follow their personal interests in developing their premedical courses of study. A

\* See page 62 for physical education requirement.

† It is suggested that electives include one of the following courses: Art 31-32, 71-72; Music 3-4; Philosophy 51-52; Religion 9-10, 21, 59-60.

The student should obtain the advice of his major department as to proper prerequisite and collateral courses for the intended major.

Credit may be given for a limited number of courses elected in Physical Education, Health, and Recreation, with the approval of the Dean.



well-balanced program, rather than a specific field, is the criterion by which an applicant is judged. It is not advisable to take courses that appear to cover subject matter in the medical program.

While well-qualified candidates are eligible for admission after completing the minimum 90 semester-hour requirement, the majority of applicants are found to be better prepared for the study of medicine after four years of college work.

### Medical Technology

First two years of the Bachelor of Science in Medical Technology curriculum. See page 73 for a description of the program and the requirements for the junior and senior years:

	Semester Hours
Comp & Lit: English 1 or 1x; 51-52, 71-72, 91-92, Classical Languages 71-72, French 51-52, German 51-52, Slavic 91-92 or 93-94, or Spanish 51-52; English 4.....	12
Foreign Lang: French, German, Russian, or nonscience elective.....	12
NOTE.—A reading knowledge of French, German, or Russian is required. This may be satisfied by French 4 or 6, German 4, or Russian 4 or 8, or by special examination.	
Math: Mathematics 3, 6, or electives.....	6
NOTE.—The Mathematics 3 requirement may be satisfied by offering two years of high school algebra, acceptable for admission; the Mathematics 6 requirement may be satisfied by offering one-half year of high school trigonometry acceptable for admission.	
* PE: .....	4
Science: Biological Sciences 1-2.....	8
Chemistry 11-12, 22, 51 †.....	16
Social Studies: Anthropology 1-2; Economics 1-2; Geography 51, 52; History 39-40, 71-72; Political Science 5-6; or Sociology 1-2 .....	6
‡ Elective: May be selected in lieu of the various exemptions.	
Total.....	64

### IN PREPARATION FOR THE SCHOOL OF EDUCATION:

#### Education

First two years of the Bachelor of Arts in Education curriculum of the School of Education:

	Semester Hours
Engl: Composition 1 or 1x, 2.....	6
Literature 51-52, 71-72, or 91-92.....	6
Foreign Lang: Chinese, French, German, Italian, Latin, Russian, or Spanish. See page 62 for foreign language requirement.....	12
Math: Two semesters to supplement senior high school courses, chosen from Mathematics 3, 6, 9, 10.....	6
* PE: .....	4

\* See page 62 for physical education requirement.

† Medical Technology students are not required to take Chemistry 52.

‡ It is suggested that electives include one of the following courses: Art 31-32, 71-72; Music 3-4; Philosophy 9-10, 59-60.

Credit is not given for courses in Physical Education, Health, and Recreation.



	Semester Hours
Psyc: Psychology 1, 22.....	6
Science: Three semesters (two in biological science and one in physical science or vice versa) to supplement senior high school courses in those fields and chosen from Biological Sciences 1-2; Chemistry 3-4, 11-12; Geology 1-2; Physics 1-2 (or 1 and 30 for students electing Physics as a teaching field). A Secondary Education Major offering for admission two or more acceptable senior high school units in the above areas of science may be exempted from one semester of this requirement.....	10-12
Social Studies: History 71-72; Political Science 5-6.....	6
Anthropology 1-2; Economics 1-2; Geography 51-52; History 39-40, 71-72; Political Science 5-6; or Sociology 1-2 .....	6
Sp&D: Speech and Drama 1 (or 11, if the Department so advises) .....	3
Elective: May be selected in lieu of the various exemptions.	
Total.....	65-67

### Physical Education for Men

First two years of the Bachelor of Science in Physical Education curriculum of the School of Education:

	Semester Hours
Engl: English 1 or 1x, 2.....	6
Hth: Health 41 .....	1
PE: Physical Education 43, 44, 49, 50, 55, 59-60.....	20
Psyc: Psychology 1, 22.....	6
Science: Biological Sciences 1-2, Chemistry 3-4.....	16
Social Studies: Anthropology 1-2 or Sociology 1-2.....	6
History .....	6
Sp&D: Speech and Drama 1 or 11.....	3
Total.....	64

### Physical Education for Women

First two years of the Bachelor of Science in Physical Education curriculum of the School of Education:

	Semester Hours
Engl: Composition 1 or 1x, 2.....	6
Literature 51-52, 71-72, or 91-92.....	6
PE: Physical Education 43-44.....	4-6
Physical Education 49, 50.....	6
Physical Education 51-52.....	4-6
Psyc: Psychology 1, 22.....	6
Science: Biological Sciences 1-2, Chemistry 3-4.....	16
Social Studies: Anthropology 1-2; History 39-40, 71-72; Political Science 5-6; or Sociology 1-2.....	6
Elective: .....	6-10
Total.....	64



### IN PREPARATION FOR THE SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION:

#### Accounting and Business Administration

First two years of the Bachelor of Business Administration curricula in Accounting, Business Administration, and International Business:

	Semester Hours
Acct: Accounting 1-2 .....	6
B Ad: Business Administration 51.....	3
Comp: English 1 or 1x, 2.....	6
* Lang or Lit: Chinese 3-4; English 51-52, 71-72, 91-92; French 3-4 or 6, or 51-52; German 3-4 or 51-52; Italian 3-4; Slavic 3-4 or 7-8, 91-92 or 93-94; Spanish 3-4 or 6, or 51-52..	6
Math: Mathematics 15, 16.....	6
† PE: .....	4
Science: Biological Sciences 1-2; Chemistry 3-4, 11-12; Geology 1-2; or Physics 1-2.....	6-8
Social Studies: Economics 1-2, Political Science 5-6, Psychology 1.....	15
Anthropology 1, Sociology 1, or Psychology 8.....	3
Stat: Statistics 51 .....	3
‡ Elective: (Speech is recommended, students interested in Interna- tional Business include Geography 52).....	4-6
Total.....	64

#### Business and Economic Statistics

First two years of the Bachelor of Business Administration curriculum in Business and Economic Statistics:

	Semester Hours
Acct: Accounting 1-2 .....	6
Econ: Economics 1-2 .....	6
Engl: English 1 or 1x, 2.....	6
§ Foreign Lang: .....	12
Math: Mathematics 21, 22, 23.....	9
† PE: .....	4
P Sc: Political Science 5-6, or	
Phil: Philosophy 51-52 .....	6
Stat: Statistics 51 or 91, 52.....	6
‡ Elective: .....	9
Total.....	64

\* This requirement is waived for students who offer 4 years of acceptable high school work in a single foreign language.

† See page 62 for physical education requirement.

‡ Credit is not given for courses elected in Physical Education, Health, and Recreation.

§ See page 62 for foreign language requirement.



### IN PREPARATION FOR THE SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS:

#### International Affairs

First two years of the Bachelor of Arts curriculum in International Affairs:

	Semester Hours
Engl: Composition 1 or 1x, 2.....	6
Literature 51-52, 71-72.....	6
* Foreign Lang: .....	12
Geog: Geography 52 .....	3
† Math, Science: Biological Sciences 1-2; Chemistry 3-4; Geology 1-2; Mathematics 3, 6; Physics 1-2; or Statistics 51, 52.....	6-8
‡ PE: .....	4
Social Studies: Economics 1-2; History 40, 71-72; Political Science 5-6....	21
§ Elective: To satisfy minimum required credits.....	4-6
Total.....	64

#### Public Affairs

First two years of the Bachelor of Arts curriculum in Public Affairs:

	Semester Hours
Engl: English 1 or 1x, 2.....	6
* Foreign Lang: .....	12
Math, Science: Biological Sciences 1-2; Chemistry 3-4; Geology 1-2; Mathematics 3, 6; Physics 1-2; or Statistics 51, 52.....	6-8
‡ PE: .....	4
Social Studies: Economics 1-2; History 39-40, 71-72; Political Science 5-6 .....	24
§ Elective: To satisfy minimum required credits.....	10-12
Total.....	64

#### TERMINAL CURRICULUM

The following two-year terminal curriculum leads to the degree of Associate in Arts. Students in this curriculum must spend the last 15 hours in residence in Columbian College:

#### Accounting

	Semester Hours
Acct: Accounting 1-2, 101, 111, 121-22, 161, 171, 181, 191, 193 .....	33
B Ad: Business Administration 131, 161, 162.....	9
Econ: Economics 1-2 .....	6
Engl: English 1 or 1x, 2.....	6
‡ PE: .....	4
§ Elective: To be selected with the approval of the adviser.....	6
Total.....	64

\* See page 62 for foreign language requirement.

† This requirement may be satisfied by 6 hours of Mathematics, by 3 hours of Mathematics plus Statistics 51, or by 6 to 8 hours of science.

‡ See page 62 for physical education requirement.

§ Credit is not given for courses elected in Physical Education, Health, and Recreation.



## Upper Division

A STUDENT working toward a Bachelor's degree in the arts or sciences who has 64 or more acceptable semester hours, whether earned in this University or transferred from another institution, is registered in the upper division of Columbian College. (For transfer from lower division to upper division, see page 63.) It is assumed that he has met the requirements of the lower division *Arts and Letters* or *Science* curriculum. If he has not, he must begin to make up his deficiencies immediately upon admission and continue to carry courses to this end until all requirements are met.

### THE BACHELOR'S DEGREES

Columbian College offers programs leading to the degrees of Bachelor of Arts, Bachelor of Science, and Bachelor of Science in Medical Technology.

In cooperation with the School of Medicine a seven-year curriculum leading to the combined degrees of Bachelor of Arts and Doctor of Medicine is offered.

### REQUIREMENTS FOR THE DEGREES

#### RESIDENCE

*A minimum of 30 semester hours, including at least 12 hours in the major field, must be completed in residence in the upper division of Columbian College.* This requirement applies to students transferring within the University as well as to students transferring from other institutions. Summer work may be counted in residence, but in no case may the period of residence aggregate less than thirty weeks. Unless special permission is granted by the Dean to pursue work elsewhere, the work of the senior or final years must be completed in residence.

For the regulation governing students who are absent from the University for one semester or more, see "Continuous Registration," page 36.

#### CURRICULUM REQUIREMENTS

At least 60 semester hours beyond those of the appropriate lower division curriculum and the satisfactory completion of the major are required. Each program must be approved by the major adviser and by the Dean.

At least 24 of the last 60 hours must be taken in subjects not included in the major field or department. The student should consult his major adviser at each registration concerning his choice of electives.

Except for premedical and medical technology students, not more than 12 hours of professional courses (i.e., courses offered in units of the University other than Columbian College) may be included. The election of professional courses must be approved by the Dean's Council prior to registration. Ordinarily courses in Physical Education, Health, and Recreation and technical courses in Education will not be approved toward a degree.

A change in degree candidacy (e.g., from Bachelor of Arts to Bachelor of Science) requires the permission of the Dean. The degree requirements effective at the time the change is approved must be met.



Each student must select and file with the Dean a choice of major upon entering the upper division. He may change the major only with the consent of the Dean and of the department or committee concerned, and must meet the requirements for the new major in effect at the time the change is approved.

First-group courses may be required as prerequisites to the major, but because of their introductory character they may not be counted as part of such programs. (See "Explanation of Course Numbers.")

Students transferring from other institutions or from other schools, colleges, or divisions in this University, with major requirements wholly or substantially met must complete satisfactorily at least 12 semester hours of approved work in the major field in the upper division of Columbian College. This work will count as part of the minimum residence requirement.

*Examination for Waiving Curriculum Requirements.*—A required course may be waived and admission to an advanced course granted by passing of a waiver examination. Passing this examination does not entitle the student to any hours of credit. Written request to take the examination should be made to the Dean and the required fee paid at the Office of the Cashier before taking the examination.

#### INDEPENDENT STUDY PLAN

A junior or senior of demonstrated capacity, with special interest in the subject matter of a course, may be permitted to undertake independent study under the personal direction of an instructor, in accordance with the rules of the department or departments concerned. Credit under this plan is limited to the specific course-credits as designated in the list of courses of instruction.

#### BACHELOR OF ARTS

The work of the junior and senior years, including a major in one of the following fields, must be approved by the major adviser and by the Dean.

American Thought and Civilization	Mathematical Statistics
Anthropology	Mathematics
Art History and Theory	Music:
Biology	Applied Music
Botany	Music History and Literature
Chemistry	Music Theory
Classical Archeology and Greek	Philosophy
Dramatic Art	Physics
Economics	Political Science
English Literature	Psychology
Fine Arts	Religion
French Language and Literature	Russian Language and Literature
Geography	Sociology
Geology	Spanish American Literature
Germanic Languages and Literatures	Spanish Language and Literature
History	Speech
Journalism	Speech Pathology and Audiology
Latin	Zoology
Latin American Civilization	



**COMBINED DEGREES OF BACHELOR OF ARTS AND DOCTOR OF MEDICINE**

A candidate for the combined degrees of Bachelor of Arts and Doctor of Medicine must: (1) complete the Medical School entrance requirements; (2) fulfill the Arts and Letters curriculum of the lower division requirements (see page 63); (3) accumulate 94 semester hours in the liberal arts, including a minimum of 30 in the upper division of Columbian College; (4) obtain the approval of the Dean of Columbian College at the time of entering the School of Medicine; (5) obtain the recommendation of the Dean of the School of Medicine at the completion of all prescribed courses in the first year of the School of Medicine, at which time the degree of Bachelor of Arts will be conferred (professional work taken at another institution will not satisfy the major requirement for the combined degrees); (6) maintain throughout the entire course the scholarship level required for graduation.

**BACHELOR OF SCIENCE**

The work of the junior and senior years, including a major in one of the following sciences, must be approved by the major department and by the Dean.

**Biological Sciences**

Biology  
Botany  
Zoology

**Physical Sciences**

Chemistry  
Geology  
Mathematical Statistics  
Mathematics  
Physics

**THE UNDERGRADUATE MAJOR**

There are two types of undergraduate majors: the field-of-study major and the departmental major.

**Field-of-Study Major**

Each Field-of-Study Major covers a carefully worked out field of coordinated study and is under the supervision of the appropriate department and the Columbian College Committee on Studies.

The Field-of-Study Major requires no specific number of semester hours, no specific program of courses, and no specific quality-point index for the major, although the student is required to meet the over-all general requirements for the degree (at least 124 semester hours with a quality-point index of at least 2.00). Ability to pass the Major Examination is assumed to be a convincing demonstration that the student possesses the breadth, depth, and quality of knowledge of his major usually defined in terms of semester hours, courses, grades, and a better-than-average quality-point index. A pamphlet on each field is obtainable from the departmental chairman. The prospective student should place himself under the direction of the appropriate adviser immediately upon completing lower division work and beginning his junior year.

The Field-of-Study Major places special emphasis on the intellectual development of the individual student. Programs in the same major may vary, depending upon the individual student's background, previous study, and aptitudes.



The student is expected to consult his adviser frequently, and the special pro-seminar offered in the field gives him further opportunity for individual advice and direction in pursuing a program especially adapted to his needs and abilities. A close student-adviser relationship is essential for the student's success under the Field-of-Study Major plan.

The following Field-of-Study Majors are offered: American Thought and Civilization, English Literature, French Language and Literature, History, Latin American Civilization, Philosophy, Religion, Russian Language and Literature, Spanish American Literature, Spanish Language and Literature.

#### PROSEMINAR IN THE MAJOR

A proseminar is offered in each field to help the student in his reading, study, and laboratory exercises acquire a coordinated knowledge of his field. It is a presentation of the content and methods of the major field as a whole through the organization and coordination of the knowledge obtained in the various formal courses in the major subject and of material not usually included in such courses. This course is not required, but, if elected, strict attendance is essential. Six semester hours, but no qualitative grade, may be assigned. When registered in this course, the student has the privilege of visiting, subject to the approval of the instructor, any other appropriate course offered in the College. (Regular attendance in a course, either for credit or as an auditor, requires registration and payment of tuition.) Proseminars are open only to the student who has been accepted as a candidate under that specific major.

#### THE MAJOR EXAMINATION

The Major Examination will normally be taken at the close of the senior year; a student on a limited schedule may take it no earlier than one calendar year before graduation. A student who fails to pass a Major Examination may, at the discretion of the Committee on Studies, be re-examined at a later regular major-examination period. The Committee on Studies has general supervision of the preparation, reading, and grading of Major Examinations. Major Examinations are held each semester on dates fixed by the department or departments concerned, but in no case later than January 15 for the fall semester, May 15 for the spring semester, and August 26 for the summer session.

#### Departmental Majors

Departmental Majors, unlike Field-of-Study Majors, are defined in terms of credit hours, required courses, and the attainment of a quality-point index of at least 2.50 in all second-group courses taken in the major field. The minimum specific requirements for Departmental Majors are listed below the staff of instruction of the department concerned. The Chairman of the Department, or designated departmental adviser, should be consulted at registration concerning the student's program of courses; and the entire program, including electives, must be approved by the Department. The student is also expected to consult the Chairman or adviser in all matters affecting his program of studies, such as changes, substitutions, or withdrawals, and especially concerning his progress in his courses. A close student-adviser relationship is desirable.



Departmental Majors are offered in the following: Anthropology; Art History and Theory; Biology; Botany; Chemistry; Classical Archeology and Greek; Dramatic Art; Economics; Fine Arts; Geography; Geology; Germanic Languages and Literatures; Journalism; Latin; Mathematical Statistics; Mathematics; Music (Music History and Literature, Music Theory, Applied Music); Physics; Political Science; Psychology; Sociology; Speech; Speech Pathology and Audiology; Zoology.

#### BACHELOR OF SCIENCE IN MEDICAL TECHNOLOGY

In cooperation with the University Hospital and the Department of Pathology of the School of Medicine, Columbian College offers work leading to the degree of Bachelor of Science in Medical Technology, the fourth year of which (12 calendar months) is spent at the University Hospital.

A candidate for this degree must: (1) Complete the Medical Technology curriculum in the lower division of Columbian College. (2) Fulfill the Columbian College requirements for the degree, including 30 semester hours of residence (the junior year) in the upper division. In the junior year Microbiology 211\* and 212 are required; all or most of the remaining courses should be selected from nonscience courses, i.e., social studies, arts, etc. (3) Complete the 12-month Medical Technology Course in the University Hospital (senior year), which constitutes the major, with an attainment of a quality-point index of 2.50.

Each candidate must make application to take the 12-month Medical Technology Course at the University Hospital; this should be done early in the junior year. While admission to the Columbian College degree program does not assure acceptance into the Medical Technology Course, George Washington University students are given preference.

A number of scholarships are provided by the University Hospital for the students enrolled in the fourth (senior) year of the degree program.

For further information concerning the Medical Technology program call 331-6386.

\* The prerequisite of Chemistry 52 is waived for Medical Technology students.





## GRADUATE SCHOOL OF ARTS AND SCIENCES

Dean A.E. Burns

### FACULTY AND CONSULTANTS IN RESEARCH

#### FACULTY

*Professors* J.G. Allee, Jr., Joseph Aschheim, J.W. Brewer, Michael Brewer, H.F. Bright, Murray Brown, R.G. Brown, A.E. Burns, W.E. Caldwell, G.V. Carroll, I.H. Cisin, J.H. Coberly, C.W. Cole, Milton Crane, Clarke Davison, R.H. Davison, A.H. Desmond, W.R. Duryee (*Research*), Julian Eisenstein, J.L. Finan, C.E. Galbreath, C.M. Goss (*Visiting*), Wood Gray, A.M. Griffin, L.J. Griffith (*Visiting*), I.B. Hansen, R.C. Haskett, P.H. Highfill, Jr., H.H. Hobbs, Thelma Hunt, Herbert Jehle, E.H. Johnson, R.G. Jones, Norman Kaplan, J.W. Kendrick, J.C. King, D.C. Kline, W.H. Kraus, Solomon Kullback, Thelma Z. Lavine, H.L. LeBlanc, L.P. Leggette, W.K. Legner, B.I. Levy, J.B. Levy, C.D. Linton, T.P.G. Liverman, Kurt London, W.A. MacDonald, H.G. Mandel, G.E. McSpadden, H.M. Merriman, J.W. Millar, F.N. Miller, Edith Mortensen, J.N. Mosél, S.C. Munson, C.R. Naeser, N.D. Nelson, Benjamin Nimer, R.C. Parlett, H.J. Parry (*Visiting*), T.M. Peery, T.P. Perros, C.W. Pettit, E.L. Phillips, R.E. Purcell, J.P. Reesing, Jr., J.W. Robb, Mary Louise Robbins, Mario Rodriguez, M.W. Schein (*Visiting*), William Schmidt, Wilson Schmidt, R.P. Sharkey, R.W. Stephens, C.T. Stewart, Jr., H.M. Stout, Rafael Supervía, Geza Teleki, I.R. Telford, R.B. Thompson, C.S. Tidball, C.R. Treadwell, L.A. Vigneras, R.D. Walk, R.H. Walker, Jr., D.S. Watson, R.L. Weintraub, D.G. White, R.K. White, N.A. Wiegmann, R.E. Wood, S.N. Wrenn, Helen Yakobson

*Adjunct Professors* J.C. Broderick, E.G. Kauffman, J.W. Pierce

*Associate Professors* Fred Abrams, Caroline Adams, L.F. Affronti, F.D. Allan, J.M. Bailey, Otto Bergmann, L.S. Bowling, S.J. Brown, J.F. Burks, J.B. Christensen, A.G. Coates, V.H. Cohn, Jr., D.S. Douglas, Nicolae Filipescu, Roland Fleischer, J.A. Frey, P.F. Gallagher, R.N. Ganz, Jr., F.S. Grubar, C.J. Herber, P.P. Hill, J.W. Hillis, H.C. Hinton, Ching-Yao Hsieh, Rudolph Hugh, Eva Johnson, Shirley Johnson, T.N. Johnson, W.R. Johnson, R.S. Jordan, J.M. Kaper (*Research*), R.W. Kenny, Hewitt Kenyon, William Key, K.S. Kim (*Research*), A.D. Kirsch, B.J. Leach, L.P. Leite, H.W. Lilliefors, Hortense Louckes (*Research*), Paul Mazel, G.E. Mazzeo, P.J. Mika, C.C. Mondale, Kittie Parker, L.B. Platt, Nadine Popluiko, Francisco Prats, H.M. Sachar, R.H. Schlagel, R.H. Shumway, B.W. Smith, George Steiner, Klaus



Thoenelt, Elizabeth Tidball, C.E. Tuthill, G.V. Vahouny, R.Z. Vause, Dewey Wallace, Jr., H.E. Yeide, Jr., A.J. Zuchelli

*Assistant Professors* Don Allensworth, A.D. Andrews II, Ruth Bari, Bette Barton, A.S. Brecher, A.D. Britt, Thomas Burns, E.A. Caress, Marie Cassidy, T.F. Courtless, Jr., Linda DePauw, C.F. Elliott, I.I. Glick, M.D. Green, W.B. Griffith, R.A. Hadley, G.A. Hahn (*Research*), Gloria Hammack, Lois Hammer, Dagmar Henney, Robert Honeygosky, C.T. Ireland, W.R. Jondorf (*Research*), Irving Katz, N.K. Khatcheressian, David Kieserman, Philip Klubes (*Research*), Ruth Krulfeld, Robert Levy, R.K. Lewis, F.L. Minn, J.A. Morgan, Jr., Subramaniam Moryadas, G.A. Olkhovsky, Robert Parris, C.H. Pfuntner, Judith Plotz, J.A. Quitslund, Bernard Reich, Melvin Reich, Charles Rice, P.T. Ridley, S.O. Schiff, Lois Schwoerer, L.G. Seeger, D.E. Silber, Carl Steiner, Elizabeth Stephenson, E.A. Stone, J.A. Straw, Brunhild Stuerckow, L.J. Tilly, William Weiss

#### DEAN'S COUNCIL

A.E. Burns (*Chairman*), R.H. Davison, H.L. LeBlanc, T.P.G. Liverman, R.C. Parlett, T.P. Perros, J.P. Reesing, Jr., R.H. Schlagel, C.S. Tidball, R.D. Walk

#### CONSULTANTS IN RESEARCH

Anton Allen, Elizabeth Anderson, Franklyn Arnhoff, Julius Axelrod, P.W. Bowman, Roscoe Brady, Jr., B.B. Brodie, Arthur Brown, Dean Burk, Allan Cartter, H.M. Cathey, George Chacko, Gerhard Colm, D.B. Cowie, Margaret de Vries, F.N. Frenkiel, Seymour Geisser, Daniel Gilbert, James Gillette, Abraham Goldin, R.L. Grant, R.E. Greenfield, Jr., Samuel Greenhouse, Frederick Gutheim, Edward HacsKaylo, D.D. Hagerman, F.E. Hahn, H.F. Haviland, Jr., W.W. Haythorn, Roy Hertz, John Houck, E.L. Hove, F.M. Hueber, L.C. Johnson, E.G. Kauffman, Milton Kern, Morton Kupperman, Otto Landman, C.E. Leese, Sar Levitan, R.T. Major, L.L. Marton, Margaret Mercer, Walter Mertz, J.B. Moloney, W.D. Odell, John Plank, J.J. Polak, Herbert Rabin, Marco Rabinovitz, W.D. Rasmussen, H.A. Rehder, R.B. Roberts, Hugues Ryser, L.P. Schultz, D.B. Scott, J.E. Seegmiller, Alexis Shelokov, W.A. Shropshire, Jr., R.S. Sigafoos, L.B. Smith, Henry Solomon, Robert Stewart, Sarah Stewart, T.D. Stewart, John Thomas, William Tullner, Sidney Udenfriend, Ernest Umberger, Ludwig von Sallmann, Martha Ward, W.E. Washburn, Emilio Weiss, Herbert Weissbach, M.I. Wolbarsht, S.S. Yeandle, Jr., R.A. Young

#### HISTORY AND ORGANIZATION

The Graduate School of Arts and Sciences is responsible for advanced study and research leading to Master's degrees and the degree of Doctor of Philosophy in the arts and sciences. Graduate programs at The George Washington University were first formally organized under a Graduate School in 1905, following several decades of gradual growth in a number of departments. In 1930 the Graduate School was discontinued. Columbian College, the University's liberal arts college, then assumed responsibility for the Master of Arts and Master of Science degrees, and a newly created Graduate Council administered all Doctor



of Philosophy programs. Professional schools took responsibility for advanced degrees in the professional fields.

In 1966 the Graduate Council and the Graduate Division of Columbian College were consolidated into a new Graduate School of Arts and Sciences. All graduate programs in the arts and sciences leading to the degrees of Master of Arts, Master of Fine Arts, Master of Music, Master of Science, and Doctor of Philosophy are under the Graduate School.

The School is under the direction of the Graduate Faculty of Arts and Sciences. It is the responsibility of the Faculty to set the requirements for admission to the School, to provide courses and programs of study and research for its students, to establish academic standards for its degrees, to recommend to the Board of Trustees the awarding of degrees, to lay down regulations as needed for the operation of the School, and generally to supervise its activities.

The administration of the School is vested in the Dean, who is Chairman of the Dean's Council, which is responsible to the Faculty of the School for all policy matters. The President of the University and the Vice President for Academic Affairs are ex officio members of the Faculty and the Dean's Council.

#### ADMISSIONS REQUIREMENTS

Application forms for admission to graduate study are obtained from the Office of the Dean of the Graduate School of Arts and Sciences. When completed, these application forms must be submitted to this Office, together with college transcripts and letters of reference.

Applicants must have academic backgrounds of excellence, usually with majors, or equivalent, in the fields in which they intend to study for advanced degrees. Normally, at least a *B* average from an accredited college is required. With evidence of special promise, such as high Graduate Record Examination scores, an applicant may be accepted whose academic record falls short of *B*. The minimum does not assure automatic acceptance. The departments may, and often do, set higher admissions standards. Moreover, the number of spaces available for new graduate students limits the number that can be accepted. Students who apply in their senior year must have completed their baccalaureate work before registration in the Graduate School.

*Application for First-year Graduate Study.*—College seniors should apply within a week or two following the close of their fall term to be considered for admission to the Graduate School the following fall. Later application diminishes the prospects for admission in the fall semester.

Applicants with Bachelor's degrees should apply four months or more before the semester for which they seek admission.

*Application for Advanced Standing.*—Applicants who are currently attending a graduate school, or who have completed some graduate work, may apply for admission as transfer students seeking advanced standing toward the degree of Doctor of Philosophy. These applications should be filed four months or more in advance of the semester for which admission is sought.

*Special Students.*—Qualified applicants whose applications are late being filed, or who have course deficiencies, may be admitted as Special Students pending acceptance or rejection by the Graduate School.



## DEGREES

Listed below are the degree programs of the Graduate School of Arts and Sciences and the specific degrees offered, by field. The programs are directed by the departments concerned. Degree programs which bridge two or more departments are directed by committees composed of members of the departments concerned. For further information write to the Dean or the chairman of the department concerned.

The graduate course work offered in support of these degrees is shown by department in this CATALOGUE.

*Continuous Registration.*—Students must maintain continuous registration while working toward the degree. If they fail to do so they are dropped from the degree program unless leave is granted by the Graduate School. Leave is granted only for good cause.

Fields	Degrees Offered
<b>I. Humanities</b>	
American Literary and Cultural History	A.M.
American Literature	Ph.D.
American Thought and Culture	Ph.D.
Art:	
Ceramics	M.F.A.
Graphics	
Painting	
Sculpture	
Art History and Criticism	A.M.
Dramatic Art	M.F.A.
English and American Literature	A.M.
English Literature	A.M. Ph.D.
French Language and Literature	A.M. Ph.D.
Germanic Languages and Literatures	A.M. Ph.D.
Linguistics	A.M.
Museology	A.M.
Music:	Mus.M.
Applied Music	
Conducting	
Music Composition	
Music Theory	
Philosophy	A.M.
Religion	A.M.
Religious Education	A.M.
Russian Language and Literature	A.M.
Spanish American Literature	A.M. Ph.D.
Spanish Language and Literature	A.M. Ph.D.
<b>II. Social Sciences</b>	
Anthropology	A.M.
Economics	A.M. Ph.D.
Geography	A.M.
History	A.M. Ph.D.
*International Relations	Ph.D.
Latin American Civilization	A.M.
Political Science	A.M. Ph.D.
Sociology	A.M.

\* The School of Public and International Affairs offers a Master of Arts field in International Affairs.



## III. Physical and Mathematical Sciences

Applied Statistics	M.S.	
Chemistry	M.S.	Ph.D.
Geochemistry	M.S.	Ph.D.
Geology	A.M., M.S.	Ph.D.
Mathematical Statistics	A.M.	Ph.D.
Mathematics	A.M.	Ph.D.
Physics	M.S.	Ph.D.

## IV. Biomedical and Related Sciences

Anatomy	M.S.	Ph.D.
Biochemistry	M.S.	Ph.D.
*Biological Sciences	M.S.	Ph.D.
Biophysics		Ph.D.
Human Ecology		Ph.D.
Microbiology	M.S.	Ph.D.
Pathology		Ph.D.
Pharmacology	M.S.	Ph.D.
Physiology	M.S.	Ph.D.
Psychology	A.M.	Ph.D.
Speech Pathology and Audiology	A.M.	

## GRADUATE PROGRAM REQUIREMENTS

## MASTER'S DEGREES

The *minimum* requirements established for the different Master's programs (Master of Arts, Master of Fine Arts, Master of Music, and Master of Science) are as follows:

1. Twenty-four semester hours of approved graduate course work
2. The attainment of a *B* average in the Master's degree program, and in background deficiency work if any
3. The passing of a reading examination in a departmentally approved foreign language
4. The passing of a Master's Comprehensive Examination
5. The completion of an approved thesis, which counts as an additional 6 semester hours of work.

The academic program for each student, including courses, readings, examinations, and research, must be approved by the appropriate department, or Interdepartmental Committee. Departments may set requirements above the minimum requirements listed above. These are described in this Catalogue, by department.

The minimum 30 hours required for the Master's degrees must be taken in the Graduate School, except for such approved course work as may be taken through the Consortium of Universities (see page 12). All work toward Master's degrees must be completed within three years of initial registration.

*The Thesis.*—The thesis may be of a research, expository, critical, or creative type. The main purpose of a Master's thesis is to demonstrate the student's ability to make independent use of the information and training acquired through his other disciplines, and to furnish objective evidence of his constructive powers in his chosen field. Registration for the thesis must be no later

\* Biology, Botany, and Zoology.



than the beginning of the final year of preparation, unless the professor in charge of the thesis permits registration at the beginning of the final semester. The choice of the thesis subject must be approved by the professor in charge of the student's field and filed in the Office of the Dean by the date announced in the University calendar. The thesis in its final form must be presented to the Dean, no later than the date announced in the University calendar. Accepted theses, with accompanying drawings, become the property of the University and are deposited in the University Library, where duplicate copies are bound and made available for circulation. Permission to publish or adapt material in them must be secured from the Dean. Printed copies of detailed regulations regarding form and reproduction of the thesis are available in the Dean's Office.

Payment of tuition for the thesis entitles the candidate, during the period of registration, to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional calendar year may be granted without further tuition payment. The student must, however, maintain continuous registration (see page 36) during this period. If the preparation of the thesis extends beyond the additional calendar year, the student must register for the entire 6 hours of thesis again and pay tuition as for a repeated course.

## REGULATIONS

*Regulations regarding REGISTRATION, FEES AND FINANCES are stated on pages 21-26; other University regulations, on pages 33-36.*

### THE DEGREE OF DOCTOR OF PHILOSOPHY

Applicants for admission to the doctoral program should know the approximate time needed to fulfill requirements for this degree. The minimum time from the baccalaureate to the doctorate is normally three years, but most students require four years, and occasionally more. The part-time doctoral student should count on six to eight years to complete his program. If an applicant is a transfer student with one year of acceptable graduate work to his credit, the above estimates of time required are reduced accordingly.

The minimum requirements established for the degree of Doctor of Philosophy are as follows:

1. Forty-eight semester hours of approved graduate course work beyond the Bachelor's degree are required, prior to the General Examination. This may include approved independent study and research for which time and credit equivalence is certified by the departments. At least a *B* average must be maintained; some departments require a higher average. Appropriate courses taken in a Master's program at this University and through the Consortium will apply to this requirement. Up to 24 semester hours of superior and recent graduate work may be transferred toward this requirement from a degree program in another approved institution, if approved by the department and the Dean. The 48-hour minimum does not include any deficiencies that must be made up or language courses taken to meet the language requirement.
2. Two foreign language reading proficiency examinations are normally required, as approved by the departments. This requirement must be satisfied before completion of the General Examination.



3. After completion of the course work and the language examinations, the student takes the General Examination. This sequence is modified in those departments that give cumulative examinations.

4. An approved research project, culminating in a dissertation, and the successful oral defense of the dissertation, complete the academic requirements for the degree of Doctor of Philosophy. The dissertation work is equivalent to a minimum of 24 semester hours beyond the General Examination.

*The Dissertation.*—The doctoral dissertation is required of all candidates as evidence of ability to perform scholarly research and to interpret its results. The candidate's dissertation subject and plan must be approved by his Director of Research and two members of the General Examination Committee, after the General Examination is passed and before actual research is begun.

No later than the date specified in the University calendar, the candidate must submit to the Dean three complete copies of the dissertation and an Abstract for inclusion in the announcement of the examination and for reproduction by University Microfilms, Inc. Accepted dissertations, with accompanying drawings, if any, become the property of the University, are bound, and made available for circulation. Permission to publish or adapt material in them must be secured from the Dean.

When the dissertation has been approved by the Director and two other department members, and filed with the Dean, the candidate is given an oral examination which is open to the public. The committee of examiners is composed of Graduate School faculty in the relevant discipline and at least two outside scholars from other universities or research organizations. If the candidate passes, the Graduate School recommends him for the degree of Doctor of Philosophy.

Printed copies of detailed regulations regarding the form and reproduction of dissertations are available in the Office of the Dean.

#### POSTDOCTORAL STUDY

The School expects its doctoral graduates to continue their interests in advanced study and research, and to contribute to its program. They may continue any studies in the University without payment of tuition, and enjoy all University library privileges. Such graduates are required to pay only the usual "continuous registration" fee in order to establish their active membership in the University. The use of laboratory space and equipment is contingent upon availability, and the cost of all laboratory or special library material is paid by the graduate. Special arrangements for such privileges must be made with the Dean well before the semester in which the graduate wishes to register. Postdoctoral work taken under this privilege may not be applied toward any degree offered by the University.

#### TEACHING FELLOWSHIPS AND GRADUATE ASSISTANTSHIPS

A limited number of teaching fellowships are assigned annually to certain departments of instruction open to doctoral students registered in the Graduate School of Arts and Sciences. In many departments of instruction graduate assistants are appointed to assist in the academic program. Applicants for teaching fellowships and graduate assistantships should inquire directly of the chair-



man of the department concerned regarding vacancies, details of appointment, and the kind of personal data to be supplied for consideration.

In addition, the Graduate School of Arts and Sciences has a number of fellowships. Applicants should write directly to the Dean for information and application forms.

#### UNITED STATES GOVERNMENT FELLOWSHIPS AND TRAINEESHIPS

The University is participating in the following Government Fellowship Programs: National Aeronautics and Space Administration Predoctoral Traineeships, National Science Foundation Traineeships, United States Public Health Service Predoctoral Fellowships and Training Grants, and National Defense Education Act (Titles IV and VI) Fellowships. Qualified students should write directly to the Dean of the Graduate School of Arts and Sciences for information and applications for these Fellowships.





## SCHOOL OF EDUCATION

*Acting Dean* B.S. Root

*Assistant Deans* R.E. Baker, Martha Rashid

### FACULTY—ACADEMIC YEAR 1966-67

*Professors* J.G. Allee, Jr., G.L. Angel, Perry Botwin, Elizabeth Burtner, W.T. Carroll, Mary Ellen Coleman, J.T. Dailey (*Research*), V.J. DeAngelis, H.G. Detwiler, F.N. Hamblin, R.G. Hanken, Thelma Hunt, L.P. Leggette, W.A. McCauley, G.E. McSpadden, B.S. Root, Carol St. Cyr, Daniel Sinick, Loretta Stallings

*Associate Professors* J.S. Aven (*Research*), R.E. Baker, Marcella Brenner, R.W. Eller, Lyndale George, Eva Johnson, Virginia Kirkbride, A.D. Kirsch, C.O. McDaniels, Leonard Nadler, Martha Rashid, Jeanne Snodgrass, S.R. Westerlund

*Assistant Professors* Donna Abbey, J.G. Boswell, Eloise Calkins, Gayle Clapp, R.S. Cottrell, Jr., Gloria Horrworth, Margaret Kiley, Margaret McIntyre, Margaret Moss, C.A. Neyman, Jr. (*Research*), Ruth Peterson, R.W. Prouty, C.B. Reed, Felicia Rochon, J.M. Snyder (*Research*), Clarke Trundle, M.G. Van Dyke, R.L. Williams, Maida Withers

*Instructors* Janet Dearcopp, R.J. Hornfeck, Miriam Jaegerman, Nancy Johnson, S.J. Korcheck, Nan Smith, L.G. Usiskin

### COMMITTEES\*

#### THE DEAN'S COUNCIL†

1966: W.T. Carroll, Carol St. Cyr

1967: H.G. Detwiler, Margaret McIntyre

1968: Gloria Horrworth, C.O. McDaniels

#### COMMITTEE ON GRADUATE STUDIES†

R.E. Baker (*Chairman*), G.L. Angel, Perry Botwin, W.T. Carroll, H.G. Detwiler, Thelma Hunt, Virginia Kirkbride, A.D. Kirsch, W.A. McCauley, C.O. McDaniels, Martha Rashid, B.S. Root, Carol St. Cyr, S.R. Westerlund, R.L. Williams

#### COMMITTEE ON ADMISSION AND ADVANCED STANDING‡

B.S. Root (*Chairman*), V.J. DeAngelis, J.Y. Ruth, Loretta Stallings

\* The Dean and Assistant Deans of the School of Education are ex officio members of all committees.

† Elected by the Faculty.

‡ Appointed by the Dean.



## COMMITTEE ON SCHOLARSHIP

B.S. Root (*Chairman*), V.J. DeAngelis, Loretta Stallings

## INTRODUCTION

It is the purpose of the School of Education to prepare teachers, counselors, and administrators for the higher ranges of educational service and to offer experienced teachers opportunities to extend their education. The School includes the departments of Education; Physical Education, Health, and Recreation; and Special Education. It offers both graduate and undergraduate work. Other departments of the University provide general education and subject-matter courses needed for a well-balanced program of teacher education. In addition to programs of study leading to the degrees, the School offers nondegree programs for certification and affiliates with the Washington School of Psychiatry in course offerings.

Individually planned programs are provided for liberal arts graduates and for housewives and retired military personnel with appropriate degrees who wish to prepare for teaching. The School also provides a wide range of courses of interest to emergency teachers who wish to qualify for teaching certificates and teachers who wish to renew licenses.

Laboratory and clinical facilities are provided by the University Reading Center and Speech and Hearing Clinic. In cooperation with public and private schools and a wide variety of social agencies, ample opportunity for field experience is provided.

In addition to a full schedule of weekday courses during the academic year, classes are offered in the evening, on Saturday, and during the summer for the convenience of teachers-in-service.

## HISTORICAL DEVELOPMENT

The University began offering professional courses for teachers in 1904-5, and in 1907 it established a Division of Education. In 1909, the Division of Education became the Teachers College, which in its early years was concerned largely with teacher preparation on the undergraduate level.

In 1928, the Teachers College became the School of Education, and greater provision was made for advanced study. Graduate enrollment has steadily increased, and today the School has a considerably larger number of graduate than undergraduate students.

## EDUCATION FOR TEACHERS

Programs are planned to provide a broad general education, adequate mastery of the content, and professional competence. The relative emphasis placed on each of these depends on the student's teaching-level plan. For example, elementary school teachers, since they teach all subjects, need preparation of greater breadth and less specialization than secondary school teachers.

Four years of full-time study is an acceptable minimum for adequate preparation for teaching. Five years terminating in a Master's degree are needed for superior preparation which will command higher salaries and opportunities for



promotion. During the first two years, the student is registered in the lower division of Columbian College of Arts and Sciences, the liberal arts college of the University, where he acquires the background of general education so essential to success as a teacher. Here he is assigned a special adviser from the School of Education to assist in planning his program. The student may defer work toward the Master's degree until after a period of teaching; he may continue toward his Master's immediately after receiving his Bachelor's degree; or he may, on entering the School of Education in his junior year, register for the remaining three years of the five-year program leading to the simultaneous confirmation of the degrees of Bachelor of Arts in Education and Master of Arts in Education. The five-year program is advised, because it permits careful planning from the outset toward the student's teaching goal and adequate preparation in two teaching fields.

## REGULATIONS

*Regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES are stated on pages 15-26; other University regulations, on pages 33-36.*

## ACADEMIC WORK LOAD

Fifteen to 17 semester hours of credit constitute a normal program. A student with a quality-point index of 3.00 or higher may, with the permission of the Dean, enroll for 18 or 19 hours. No student may enroll for more than 19, except by permission of the Committee on Scholarship.

A student employed 15 hours or less a week may carry a normal program of college work.

A student employed from 16 to 25 hours a week may enroll for 12 or 13 hours. Such a student with a quality-point index of 3.00 or higher may, with special permission of the Dean, enroll for 15 or 16 hours.

A student employed from 26 to 34 hours a week may enroll for 9 or 10 hours. Such a student with a quality-point index of 3.00 or higher may, with special permission of the Dean, enroll for 12 or 13 hours.

A student employed 35 hours or more a week may enroll for 6 or 7 hours. Such a student with a quality-point index of 3.00 or higher may, with special permission of the Dean, enroll for 9 or 10 hours.

A student who increases his hours of employment after registration or at any time during a semester must report immediately to the Dean so that his program may be adjusted, if necessary.

## The Bachelor's Degrees

THE SCHOOL OF EDUCATION OFFERS PROGRAMS leading to the degrees of Bachelor of Arts in Education and Bachelor of Science in Physical Education.

The program of each student must be approved by a Faculty adviser. Since each student's program is defined by his particular needs, it is important that the student have a clear concept of his major interest in education, and also that he



be familiar with the teaching-certificate requirements of the locality in which he expects to teach.

### ENTRANCE REQUIREMENTS

*Bachelor of Arts in Education* and *Bachelor of Science in Physical Education*.—The satisfactory completion of the appropriate curriculum in the lower division of Columbian College of Arts and Sciences (see pages 65–66); the equivalent from another accredited higher institution; or a certificate of graduation from an approved normal school or the equivalent is required. Applicants must have personality traits that give promise of success as a teacher.

### REQUIREMENTS FOR THE DEGREES

To be recommended for a degree a student must satisfy the admission, residence, scholarship, and curriculum requirements.

#### RESIDENCE

Candidates for the Bachelor's degrees must complete satisfactorily while in the School of Education a minimum of 30 semester hours, 9 of which, with the approval of the adviser, may be in Off-Campus courses of the College of General Studies.

For full details concerning continuous registration, see page 36.

#### SCHOLARSHIP

For the system of grading and of computing scholarship, see pages 33–34.

In order to graduate, a student must have a quality-point index of at least 2.00.

*Probation*.—A student who fails to maintain a quality-point index of at least 2.00 is placed on probation. He remains on probation as long as his index is below 2.00, or until his probation is removed by the Committee on Scholarship.

*Suspension*.—A student on probation who fails to raise his index to 2.00 within the time specified may be suspended.

A student suspended for poor scholarship may, within ten days, appeal his case to the Committee on Scholarship through the Dean. If the case appears to be remediable and the student seems likely to improve his scholarship, the Committee may readmit him on probation. A student denied readmission may again, after a lapse of a calendar year, petition the Committee through the Dean for readmission. A student suspended twice will not be readmitted.

#### CURRICULUM REQUIREMENTS

In all Bachelor's curricula at least 30 semester hours must consist of courses numbered above 100.

### BACHELOR OF ARTS IN EDUCATION

The objective of programs leading to the degree of Bachelor of Arts in Education is to provide (1) general educational backgrounds; (2) functional command of ideas, concepts, knowledge, and skills in one or more teaching fields;



(3) mastery of basic professional information and skills adequate for the beginning teacher; and (4) development of attitudes needed for success in teaching.

The general educational backgrounds needed by prospective teachers are obtained through precollege education, college courses, work experience, leadership activities, student campus activities, and off-campus cultural opportunities.

Normally, from 65 to 67 semester hours of the total requirement are completed in the lower division of Columbian College of Arts and Sciences of this University or in an equivalent institution elsewhere. (See "Education," pages 65-66.) Since the teaching fields differ in content, scope, and complexity, some programs are longer than others. None requires less than 126 hours of satisfactory work, exclusive of required Physical Education.

*Work experience, leadership activities, participation in student campus activities, and the utilization of off-campus cultural opportunities.*—As part of formal course work and on their own initiative, students of the School of Education are expected to take full advantage of the many opportunities in the Washington area for developing leadership skills. Advisers are available to help students plan these experiences.





## NATIONAL TEACHER EXAMINATIONS

All candidates for the degree of Bachelor of Arts in Education are required to take the National Teacher Examinations. Those expecting to graduate in June should take the examinations the previous January or March; those expecting to graduate in February, in July or October. Students expecting to complete degree requirements during the Summer Sessions should take the examinations in March or July.

Students receive individual reports of test scores and may avail themselves of the regular transcript services of the Educational Testing Service. Students must request the Testing Service to send copies of test scores to the School of Education.

Students required to take the examinations must register for them in the Office of the Dean at least thirty days prior to the date of the examination. Details concerning time, place, registration, and fees may be obtained in the Office of the Dean.

## TEACHING-FIELD PREPARATION

Teaching-field preparation depends upon the teaching position for which the student is preparing. Those planning to teach in elementary schools need a degree of competency in several fields. Those preparing to teach in junior or senior high schools must demonstrate competency in a major teaching field. A minor teaching field is optional, but recommended. Ordinarily, students preparing to teach in evening schools for adults are required to prove competency in only one teaching field. The student should begin teaching-field preparation while in the lower division of Columbian College.

Teaching-field requirements include satisfactory completion of prescribed academic courses in one or more fields, a satisfactory score on the special field examination of the National Teacher Examinations\* and satisfactory completion of the prescribed special methods courses.

Prescribed academic courses vary in number in accordance with the scope and complexity of the teaching field and the license requirements of the various states. Minimum academic course requirements for each major teaching field are listed on succeeding pages. Minor teaching-field requirements are somewhat less than those of a major field. Students preparing to teach on the elementary level are advised to use electives to increase their mastery of content in an academic field or an area of specialization, such as Physical Education.

The prescribed courses in special methods are concerned primarily with methods of initiating, guiding, and evaluating learning experiences dealing with the content of teaching fields. They attempt to bring to the student specific suggestions drawn from the accumulated experience of successful teachers. However, in addition, the courses review the teaching-field content currently in use

\* Special field examinations of the National Teacher Examinations are available in elementary education; early childhood education; biology and general science; English language and literature; industrial arts; mathematics; chemistry, physics, and general science; social studies; physical education; business education; music education; home economics; and art education. Students preparing to teach history or geography take the special field examination in social studies.

Students preparing to teach in fields in which special field examinations are not available (language and speech) must obtain a satisfactory score on a special field examination given by the instructor in the special methods course involved.



in schools, and examinations at the end of courses provide the final test of competency in the teaching fields.

#### PREScribed COURSES IN THE VARIOUS TEACHING FIELDS

<b>Art</b>		Semester Hours
Art 1: Art Appreciation .....		3
Art 31-32: Survey of Western Art, or		
Art 71-72: Introduction to the Arts in America.....		6
Art: To be selected from second-group Art History courses or any third-group Art History courses open to the under- graduate .....		6
Art: To be selected from the following.....		27
Art 10: Art Structure		
* Art 21-22: Basic Design		
Art 41-42: Drawing I		
Art 51-52: Ceramics I		
Art 57-58: Introduction to Graphic Techniques		
Art 65-66: Painting I		
Art 81-82: Sculpture I		
Art 121-22: Design: Structured		
Art 123-24: Design: Individual Problems		
Art 125-26: Painting II		
Art 127-28: Painting III		
Art 131-32: Ceramics II		
Art 139-40: Design Workshop		
Art 143-44: Serigraphy		
Art 151-52: Ceramics III		
Art 153-54: Etching		
Art 157-58: Relief Printing		
Art 165-66: Painting, Drawing, Composition		
Art 175-76: Design Projects		
Art 179-80: Sculpture II		
Art 189-90: Sculpture III		
Total.....		42
<b>Biology</b>		
B Sc 1-2: Introductory Biology .....		8
B Sc 101-2: Invertebrate Zoology .....		6
B Sc 104: Comparative Vertebrate Anatomy.....		4
B Sc 108: Organic Evolution or		
B Sc 127: Genetics .....		3
B Sc 163: Human Physiology .....		3
B Sc: Advanced Botany courses as approved by the adviser.....		6
Chem 11-12: General Chemistry .....		8
Phys 1, 2: General Physics .....		8
Total.....		46

\* Prerequisite to all work in studio practice.



**Chemistry**

	Semester Hours
Chem 11-12: General Chemistry or	
Chem 15-16: Intensive General Chemistry.....	8
Chem 22: Elementary Quantitative Analysis.....	4
Chem 51-52: Organic Chemistry .....	9
Chem 111: Physical Chemistry .....	3
Chem 191: History of Chemistry .....	2
Math 6: Plane Trigonometry .....	3
Math 21: Calculus I .....	3
Phys 1, 2: General Physics .....	8
Total.....	40

**Dance**

Mus 103-4: History of Music.....	6
PE 49: Human Anatomy .....	3
PE 50: Kinesiology .....	3
PE 56: Dance Technique and Theory.....	1
PE 107: Teaching Recreational Dance.....	2
PE 109: Dance Composition I.....	1
PE 110: Dance Composition II.....	1
PE 117: Teaching Modern Dance.....	3
PE 118: Dance Production.....	3
PE 119: Creative Dance for Children.....	3
PE 120: Repertory .....	1
PE 134: Rhythmic Analysis through Creative Movement.....	3
PE 135-36: Survey of Dance History.....	6
Sp&D 165-66: History of the Theater.....	6
Total.....	42

**Earth Science**

B Sc 1-2: Introductory Biology.....	8
Chem 11-12: General Chemistry.....	8
Geol 1-2: Introductory Geology.....	6
Geol 14: General Petrology.....	4
Geol 101: History of Geological Sciences.....	3
Geol 122: Structural Geology.....	3
Geol 125: Marine Geology.....	3
* Math 3: College Algebra.....	3
* Math 6: Plane Trigonometry.....	3
Phys 1: General Physics .....	4
Other Courses: To be selected from the following as approved by the ad- viser .....	6
Anth 186: Physical Anthropology	
Geol 128: Geomorphology	
Geol 141: Introductory Geochemistry	
Geol 151-52: Invertebrate Paleontology	
Geol 163: Sedimentation	
Geol 166: Principles of Stratigraphy	

\* Additional mathematics is required for some advanced geology courses.



Geol 191: Laboratory Techniques I  
Geol 192: Laboratory Techniques II

Total..... 51

### Elementary Education

Art: As approved by the adviser.....	3
Geog 51: Introduction to Geography.....	3
Geog 52: World Regions .....	3
Hist 71-72: Civilization of the United States.....	6
Math 9, 10: General Mathematics I, II.....	6
Music: As approved by the adviser.....	3
Physical	
Education: As approved by the adviser.....	3
Science: As approved by the adviser.....	9-12
Other Courses: To be selected from the following as approved by the adviser .....	6
Anth 1-2: Introductory Anthropology	
Econ 1-2: Principles of Economics	
Hist 39-40: European Civilization in Its World Context	
P Sc 5-6: Introduction to Political Science, or	
Soc 1-2: Introductory Sociology	

Total..... 42-45

### English

Engl 1 or 1x, 2: English Composition.....	6
Engl 52: Introduction to English Literature.....	3
Engl 71-72: Introduction to American Literature.....	6
Engl 109: Expository Writing.....	3
Engl 125: Introduction to English Linguistics.....	3
Engl 135-36: Shakespeare .....	6
Sp&D 11: Voice and Diction.....	3
* Engl: To be selected from the following as approved by the adviser .....	9
Engl 151-52: The Romantic Movement	
Engl 161-62: Victorian Literature	
Engl 165-66: The 20th Century	
Engl 170: The American Short Story	
Engl 171-72: Studies in American Literature	
Engl 173-74: Major American Poets	
Engl 175-76: American Drama	
Engl 177-78: The American Novel	
Engl 182: The English Novel	
Engl 183-84: The English Drama	

Total..... 39

\* Not required for the minor teaching field.



**French**

	Semester Hours
Fren 9-10: French Conversation and Composition.....	6
Fren 51-52: Survey of French Literature and Civilization.....	6
Fren 103: Problems of Pronunciation and Intonation.....	3
Fren 109-10: Advanced French Conversation and Composition.....	6
Fren 125-26: 19th Century French Literature.....	6
Fren 127-28: 20th Century French Literature.....	6
French: Additional courses as approved.....	6
Other Courses: Recommended from the following but not required.....	6
Art 109: 19th Century Art in Europe	
Art 110: Contemporary Art	
Engl 125: Introduction to English Linguistics	
Fren 119-20: 16th Century French Literature	
Fren 121-22: 17th Century French Literature	
Fren 123-24: 18th Century French Literature	
Foreign Lang: Other than French as approved	
Hist 141-42: History of France	
Psyc 115: Psychology of Language and Communication	
Total.....	39-45

**General Science \***

B Sc 1-2: Introductory Biology.....	8
Chem 11-12: General Chemistry or	
Chem 15-16: Intensive General Chemistry.....	8
Chem 22: Elementary Quantitative Analysis.....	4
Phys 1, 2: General Physics.....	8
† Science: Additional courses as approved by the adviser.....	10
Math: To be selected from the following.....	9
Math 3: College Algebra	
Math 6: Plane Trigonometry	
Math 21, 22,	
23, 24: Calculus I, II, III, IV	
Total.....	47

**Geography**

Geog 51: Introduction to Geography.....	3
Geog 52: World Regions .....	3
Geog 103-4: Cartography .....	8
Geog 105: Weather and Climate.....	3
Geol 1: Introductory Geology.....	3
‡ Geog: To be selected from the following.....	9
Geog 125: Transportation Complexes	
Geog 126: World Economic Geography	
Geog 127: World Settlement	
Geog 132: Natural Resources	
Geog 134: Location of Industry	
Geog 141: Urban Settlement	

\* May not be chosen as a minor teaching field.

† Eighteen semester hours in one science field are required for certification.

‡ Not required for the minor teaching field.



	Semester Hours
Geog 146: World Political Geography	
* Geog: To be selected from the following.....	3
Geog 151: United States and Canada	
Geog 153: Western Europe	
Geog 155: Africa	
Geog 161: Latin America	
Geog 165: Asia	
Geog 166: Soviet Union and Eastern Europe	
Total.....	32

**German**

Germ 1-2: First-year German.....	6
Germ 3-4: Second-year German.....	6
Germ 9-10: German Conversation and Composition.....	6
Germ 51-52: Introduction to German Literature.....	6
* Germ 179-80: Advanced Composition.....	2
* German: Additional courses as approved by the adviser.....	12
Total.....	38

**History**

Hist 39-40: European Civilization in Its World Context.....	6
Hist 71-72: Civilization of the United States.....	6
Hist: Research Seminar (see adviser, Department of History)....	6
Hist: Six semester hours in each of three of the following groups as approved by the adviser.....	18
* Hist: Additional semester hours from any one of the following groups as approved by the adviser.....	6

**GROUP 1: AMERICAN HISTORY**

Hist 170: American Colonial History	
Hist 171-72: U. S. Social History	
Hist 173: Representative Americans	
Hist 175-76: U. S. Political History	
Hist 177: The South	
Hist 179-80: U. S. Economic History	
Hist 181-82: U.S. Diplomatic History	
Hist 183: Oversea Expansion of the United States	

**GROUP 2: EUROPEAN HISTORY**

Hist 109-10: Ancient History	
Hist 111-12: Medieval History	
Hist 121: The Renaissance in Western Europe	
Hist 130: Nationalism	

\* Not required for the minor teaching field.



Semester  
Hours

Hist 131-32:	History of Germany	
Hist 141-42:	History of France	
Hist 145-46:	History of Russia	
Hist 147:	Economic History of Europe	
Hist 149-50:	European Diplomatic History	
Hist 151-52:	History of England and Great Britain	

## GROUP 3: THE EASTERN WORLD

Hist 145-46:	History of Russia	
Hist 187:	History of Modern China	
Hist 189:	History of India	
Hist 193:	History of the Near East	
Hist 195-96:	History of East Asia	

## GROUP 4: LATIN AMERICAN HISTORY

Hist 162:	History of Spain and Portugal	
Hist 163-64:	History of Latin America	
Hist 165:	History of Brazil	
Hist 166:	History of Mexico	
P Sc 177:	Latin American Politics and Government	
P Sc 178:	International Politics in the Western Hemisphere	

Total.....	42
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**Mathematics**

Math 21, 22,		
23, 24:	Calculus I, II, III, IV.....	12
Math 122:	Introduction to Abstract Algebra.....	3
Math 124:	Introduction to Matrix Theory.....	3
Math 127:	Foundations of Geometry	
or Math 135:	Projective Geometry.....	3
* Math:	Three additional courses in Mathematics approved by the adviser .....	9
Stat 155:	Introduction to Mathematical Probability.....	3

Total.....	33
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**Music**

Mus 5-6:	Elementary Harmony.....	6
Mus 103-4:	History of Music.....	6
Mus 131-32:	Advanced Harmony.....	6
Applied Music:	Voice or major instrument.....	6
Applied Music:	Minor instruments .....	6
Ensemble:	Choral or Orchestral.....	3
Music Literature:	As approved by the adviser.....	6
Music Theory:	As approved by the adviser.....	3

Total.....	42
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\* Not required for the minor teaching field.



**Physical Education \***

	Semester Hours
B Sc 1-2: Introductory Biology .....	8
B Sc 163: Human Physiology .....	3
Hth 41: Personal Health and First Aid (men).....	1
Hth 122: Methods and Materials for Health Education.....	3
PE 43: Physical Education Motor Activities (men)	
or PE 43-44: Physical Education Motor Activities (women).....	3-4
PE 49: Human Anatomy .....	3
PE 50: Kinesiology .....	3
† PE 51-52: Teaching Physical Education Activities (women)	
or † PE 115-16: Intramural Program Organization (men).....	4
PE 107: Teaching Recreational Dance.....	1
‡ PE 113-14: Practice in Teaching Activities (women 4 hours) (men 6 hours) .....	4-6
† PE 117: Teaching Modern Dance (women).....	2
† PE 138: Organization and Administration of Physical Education....	3
Total.....	38

**Physics**

Chem 11-12: General Chemistry .....	8
Math 21, 22,	
23, 24: Calculus I, II, III, IV.....	12
Phys 1, 30: General Physics .....	8
Phys 31-32: Introduction to Theoretical Physics.....	4
Phys 51-52: Introduction to Experimental Physics.....	4
Phys: To be selected from the following.....	6
Phys 161: Mechanics I	
Phys 163: Optics	
Phys 164: Thermodynamics	
Phys 165: Electromagnetic Theory	
Phys 167: Modern Physics	
Total.....	42

**Russian**

Slav 9-10: Russian Conversation and Composition.....	6
Slav 91-92: Introduction to Russian Literature.....	6
Slav 106: Problems of Pronunciation and Intonation.....	3
Slav 125: Russian Linguistic Structure.....	3
Slav 126: Comparative Russian-English Linguistic Structure.....	3
Slav 141-42: 19th Century Russian Literature	
or Slav 151-52: 20th Century Russian Literature.....	6
Slav 197: Special Problems in Teaching Russian.....	3
§ Slav: Additional courses from the following as approved by the adviser .....	9
Slav 93-94: Introduction to Slavic (non-Russian) Literature	
Slav 101-2: Readings in Modern Russian	

\* May be chosen as a minor field only, for Bachelor of Arts in Education. See pages 97-100 for requirements for the Bachelor of Science in Physical Education.

† Required only of those preparing to teach on the secondary school level.

‡ Required only of those preparing to teach on the elementary school level.

§ Not required for the minor teaching field.



	Semester Hours
Slav 103-4: Scientific Russian	
Slav 109-10: Advanced Russian Conversation and Composition	
Slav 128: Dostoyevsky, the Man and the Artist	
Slav 143-44: The Russian Novel	
Slav 145-46: The Russian Short Story	
Slav 156: Leo Tolstoy, His Life and Works	
Slav 161-62: Russian Culture	
Slav 165: Soviet Literature	
Total.....	39

### Social Studies

Econ 1-2: Principles of Economics.....	6
Hist 39-40: European Civilization in Its World Context.....	6
Hist 71-72: Civilization of the United States.....	6
P Sc 5-6: Introduction to Political Science.....	6
Other Courses: To be selected from the following.....	6
Anth 1-2: Introductory Anthropology	
Geog 51: Introduction to Geography	
Geog 52: World Regions	
Soc 1-2: Introductory Sociology	
* Other Courses: Second-group courses, as approved by the adviser, from Anthropology, Economics, Geography, History, Political Science, and Sociology.....	12
Total.....	42

### Spanish

Span 9-10: Spanish Conversation and Composition.....	6
Span 51-52: Survey of Spanish Literature and Civilization.....	6
Span 103: Problems of Pronunciation and Intonation.....	3
Span 109-10: Advanced Spanish Conversation and Composition.....	6
Span 125-26: Modern Spanish Literature.....	6
Span 127-28: Contemporary Spanish Literature.....	6
Span: Additional Spanish courses as approved.....	6
Other Courses: Recommended from the following but not required.....	6
Engl 125: Introduction to English Linguistics	
Foreign Lang: Other than Spanish as approved	
Hist 162: History of Spain and Portugal	
Hist 163-64: History of Latin America	
Hist 165: History of Brazil	
Hist 166: History of Mexico	
Psyc 115: Psychology of Language and Communication	
Span 121-22: Spanish Literature of the Golden Age	
Span 123-24: Cervantes: Don Quijote	
Span 151-52: The Spanish American Novel	
Span 155-56: Spanish American Literature to 1880	
Span 157-58: Spanish American Literature since 1880	
Total.....	39-45

\* Not required for the minor teaching field.



**Speech and Drama**

	Semester Hours
Sp&D 1: Effective Speaking .....	3
Sp&D 2: Persuasive Speaking .....	3
Sp&D 11: Voice and Diction.....	3
Sp&D 32: Oral Reading .....	3
Sp&D 101: Phonetics .....	3
Sp&D 121: Group Discussion and Conference Leadership.....	3
Sp&D 153: Acting .....	3
Sp&D 171: Introduction to Speech Pathology and Audiology.....	3
Area of Specialization: Selected from one of the following groups as approved by the adviser.....	12

**\*GROUP 1: SPEECH**

Sp&D 102: Oral Interpretation of Literature
Sp&D 126: Public Discussion and Debate
Sp&D 127-28: Advanced Debate Practice
Sp&D 141: Public Speaking: Advanced Forms
Sp&D 172: Speech Pathology I
Sp&D 173: Speech Pathology II
Sp&D 176: Speech, Hearing, and Language Development
Sp&D 182: Hearing Problems and Testing of Hearing

**\*GROUP 2: DRAMA**

Sp&D 102: Oral Interpretation of Literature
Sp&D 133-34: Radio and TV Broadcasting
Sp&D 151-52: Stagecraft
Sp&D 154: Play Direction
Sp&D 155-56: Play Production Practice
Sp&D 165-66: History of the Theater
Sp&D 169: Creative Dramatics
Sp&D 170: Children's Theater
Other Courses: English, Psychology, or Speech and Drama as approved by the adviser

Total..... 36

**PROFESSIONAL EDUCATION**

The basic professional information, skills, and attitudes needed by beginning teachers are provided through a sequence of courses to be taken in the junior and senior years. Lectures and class discussions are closely coordinated with field work. Instruction is differentiated to meet the needs of those preparing to teach on the various levels—elementary school, junior high school, senior high school, and adult.

\* Not required for the minor teaching field.



**Professional Courses—Secondary**

	Semester Hours
Educ 108: Human Development, Learning, and Teaching.....	3
Educ 112: Educational Measurement, or Stat 53: Introduction to Statistics in Psychology and Education.....	3
Educ 123: Society and the School.....	3
Educ 131: Secondary School Principles and Methods.....	3
Educ 134: Student Teaching in Secondary Schools.....	6-9
Special Methods: Three to six semester hours from the following courses..	3-6
Educ 136: Teaching English in Secondary Schools	
Educ 137: Teaching Speech	
Educ 138: Teaching Social Studies in Secondary Schools	
Educ 139: Teaching Art in Secondary Schools	
Educ 140: Teaching Mathematics in Secondary Schools	
Educ 141: Teaching Latin	
Educ 142: Teaching Music in Secondary Schools	
Educ 144: Teaching Science in Secondary Schools	
Educ 146: Teaching Foreign Languages	
Total.....	21-27

**Professional Courses—Elementary**

Educ 108: Human Development, Learning, and Teaching.....	3
Educ 111: Elementary School Curriculum and Methods.....	15
Educ 112: Educational Measurements, or Stat 53: Introduction to Statistics in Psychology and Education.....	3
Educ 123: Society and the School.....	3
Educ 135: Student Teaching in Elementary Schools.....	9
Total.....	33

**BACHELOR OF SCIENCE IN PHYSICAL  
EDUCATION FOR MEN\***

There are three curricula leading to this degree. The curriculum in Physical Education with an academic minor is designed to prepare students for teaching positions in smaller schools where it is necessary to teach an academic subject in addition to physical education. The Physical and Health Education curriculum prepares for the teaching of physical and health education in the larger schools. The curriculum in Physical Education and Recreation has been planned for those who wish to be prepared to direct programs of recreation in addition to the teaching of physical education.

**PREREQUISITE**

For the first two years of the Bachelor of Science in Physical Education curriculum, see Columbian College of Arts and Sciences, page 66.

\* Physical Education may also be chosen as a minor teaching field by candidates for the degree of Bachelor of Arts in Education, see page 94.



**CURRICULUM IN PHYSICAL EDUCATION WITH AN ACADEMIC MINOR**

The minimum requirements for this degree are 66 semester hours, as follows:

<b>Junior Year</b>		Semester Hours
B Sc 163: Human Physiology .....		3
Educ 108: Human Development, Learning, and Teaching.....		3
Educ 123: Society and the School.....		3
Hth 121: School and Community Health Programs.....		3
Hth 122: Methods and Materials for Health Education.....		3
PE 105: Adapted Physical Education and Physical Examinations....		3
PE 107: Teaching Recreational Dance.....		1
PE 113-14: Practice in Teaching Activities.....		6
PE 158: Safety Education .....		3
PE 160: Safety and Driver Education.....		3
Academic		
Teaching Field: .....		2
Total.....		33

<b>Senior Year</b>		
Educ 131: Secondary School Principles and Methods.....		3
Educ 134: Student Teaching in Secondary Schools.....		6-9
PE 103: History and Principles of Physical Education.....		3
PE 115-16: Intramural Program Organization.....		4
PE 131: Tests and Measurements in Physical Education.....		3
PE 138: Organization and Administration of Physical Education....		3
Academic		
Teaching Field: .....		8-11
Total.....		33

**CURRICULUM IN PHYSICAL AND HEALTH EDUCATION**

<b>Junior Year</b>		
B Sc 163: Human Physiology .....		3
Educ 108: Human Development, Learning, and Teaching.....		3
Educ 123: Society and the School.....		3
Hth 121: School and Community Health Programs.....		3
Hth 122: Methods and Materials for Health Education.....		3
PE 107: Teaching Recreational Dance.....		1
PE 113-14: Practice in Teaching Activities.....		6
PE 158: Safety Education .....		3
PE 160: Safety and Driver Education.....		3
Elective: .....		5
Total.....		33



**Senior Year**

	Semester Hours
Educ 131: Secondary School Principles and Methods.....	3
Educ 134: Student Teaching in Secondary Schools.....	6-9
PE 103: History and Principles of Physical Education.....	3
PE 105: Adapted Physical Education and Physical Examinations....	3
PE 115-16: Intramural Program Organization.....	4
PE 131: Tests and Measurements in Physical Education.....	3
PE 138: Organization and Administration of Physical Education....	3
Elective: .....	5-8
Total.....	33

**CURRICULUM IN PHYSICAL EDUCATION AND RECREATION****Junior Year**

B Sc 163: Human Physiology .....	3
Educ 108: Human Development, Learning, and Teaching.....	3
Educ 123: Society and the School.....	3
Hth 121: School and Community Health Programs.....	3
PE 107: Teaching Recreational Dance.....	1-2
PE 113-14: Practice in Teaching Activities.....	6
PE 158: Safety Education .....	3
Rec 48: Introduction to Recreation.....	2
Rec 132: Camp Leadership .....	2
Rec 151-52: Recreational Leadership Activities.....	6
Elective: .....	0-1
Total.....	33

**Senior Year**

Educ 131: Secondary School Principles and Methods.....	3
Educ 134: Student Teaching in Secondary Schools.....	6-9
Hth 122: Methods and Materials for Health Education.....	3
PE 103: History and Principles of Physical Education.....	3
PE 131: Tests and Measurements in Physical Education.....	3
PE 138: Organization and Administration of Physical Education....	3
Rec 161: Community Organization for Recreation.....	3
Rec 162: Administration of Community Recreation Programs.....	3
Elective: .....	3-6
Total.....	33

**BACHELOR OF SCIENCE IN PHYSICAL EDUCATION  
FOR WOMEN**

This curriculum, which is designed to prepare students for teaching in elementary and secondary school programs of physical education, offers opportunity for specialization in dance, adapted physical education, health education, and recreation.



The student wishing to prepare to teach another subject in addition to physical education may use her elective hours to work toward a minor teaching field. Relevant work completed in Columbian College may be counted.

#### PREREQUISITE

For the first two years of this curriculum, see page 66.

#### Junior Year

	Semester Hours
B Sc 163: Human Physiology .....	3
Educ 108: Human Development, Learning, and Teaching.....	3
Educ 123: Society and the School.....	3
Hth 121: School and Community Health Programs.....	3
Hth 122: Methods and Materials for Health Education.....	3
PE 105: Adapted Physical Education and Physical Examinations....	3
PE 107: Teaching Recreational Dance.....	1
PE 111-12: Teaching Physical Education Activities.....	4
PE 117: Teaching Modern Dance.....	2
Rec 132: Camp Leadership .....	2
Elective or minor teaching field: .....	7
Total.....	34

#### Senior Year

Educ 131: Secondary School Principles and Methods.....	3
Educ 134: Student Teaching in Secondary Schools.....	6-9
PE 101: Elementary School Physical Education.....	3
PE 103: History and Principles of Physical Education.....	3
PE 113: Practice in Teaching Activities.....	3
PE 131: Tests and Measurements in Physical Education.....	3
PE 138: Organization and Administration of Physical Education....	3
Elective or minor teaching field: .....	5-8
Total.....	32

### The Degree of Master of Arts in Education

PROGRAMS OF STUDY LEADING TO THE DEGREE of Master of Arts in Education are designed to enable prospective teachers and teachers of experience to increase their knowledge of professional and academic information and skills and prepare for special types of educational service. They also provide opportunities for college graduates in other disciplines to acquire needed professional education.

From the various related departments of the University, the student and his adviser select courses to give the student an adequate background in his chosen



field of service. The prospective high school or junior high school teacher will ordinarily include study in the subject which he is planning to teach as well as in professional education.

Programs for teachers-in-service and experienced teachers planning to re-enter the profession are differentiated from those for students without teaching experience. Additional information concerning these programs may be obtained by writing or telephoning to the Dean.

Master's programs are available in the following fields: (1) adult education, (2) classroom teaching—to include strengthening mastery of teaching field, (3) comparative education, (4) curriculum, (5) elementary education, (6) employee training, (7) guidance, (8) health education, (9) history of education, (10) human growth and development, (11) philosophy of education, (12) physical education, (13) reading, (14) school administration, (15) secondary education, (16) special education, (17) student personnel work in higher education.

#### FIVE-YEAR PROGRAM

A candidate entering the School of Education from the lower division of Columbian College of Arts and Sciences (or with equivalent preparation) may choose a three-year program leading to the degrees of Bachelor of Arts and Master of Arts in Education to be conferred simultaneously. The first year of this combined program will be devoted to teaching-field preparation; the work of the second year will include the Bachelor of Arts junior-year professional courses and a maximum of 18 semester hours of graduate courses; that of the third and final year, senior-year undergraduate professional courses and the remaining graduate courses needed for the Master's degree. Student Teaching, to be elected in the third year, may not be taken for graduate credit. A quality-point index of at least 2.50 in undergraduate courses must be attained before beginning the work of the senior year and the program must meet all the requirements for the degrees of Bachelor of Arts and Master of Arts in Education.





**ENTRANCE REQUIREMENTS**

A Bachelor's degree from an accredited institution; an undergraduate quality-point index of 2.50 or above (*C+* average); demonstrated interest in teaching; and personality traits that give promise of better-than-average success as a teacher.

Two years of successful teaching are required before admission to candidacy in the fields of guidance and school administration.

**ADMISSION TO CANDIDACY**

Candidates whose undergraduate preparation does not include equivalents of the basic requirements of the degree of Bachelor of Arts in Education must make up deficiencies and may be required to take designated tests.

**ADVANCED STANDING**

For the record, advanced standing is granted for approved courses taken at other accredited institutions, but a minimum of 30 semester hours must be completed at this University as a Master's candidate.

A maximum of 12 semester hours of advanced courses completed in this University in excess of the requirements for the Bachelor's degree may be credited toward the Master's degree if the work fits in with the student's plan of specialization and is approved in writing by the Dean before being undertaken.

Advanced standing is not granted for work completed five or more years before application for admission or readmission to Master's candidacy.

**REQUIREMENTS FOR THE DEGREE****PLAN OF STUDY**

The plan of study leading to the degree of Master of Arts in Education requires a minimum of 33 hours of graduate credit. The plan may, at the student's option, include a thesis carrying 6 hours of graduate credit. Whether or not a student selects the thesis option, a minimum of 18 hours, including a course in educational research methods and procedures, must be from courses planned primarily for graduate students (third-group courses). A minimum of 12 hours, not including the thesis or the research course, must be from courses offered by the School of Education.

Programs may include additional teaching-field preparation. In such cases, however, undergraduate and graduate courses combined must be at least equivalent to the undergraduate requirements for the degree of Bachelor of Arts in Education (see pages 85-97).

Programs are planned initially in conference with an admission adviser in the Office of the School of Education and subsequently with a designated adviser in the candidate's area of specialization. These programs are based on the interests of the candidate, his previous background, and the certification requirements of the state and locality in which the candidate plans to teach.

All degree requirements must be completed within a period of six years.



## RESIDENCE

The satisfactory completion of 30 semester hours as a candidate for the degree is required. With the approval of the adviser, 9 of the 30 hours may be off-campus courses in the College of General Studies.

## SCHOLARSHIP

For graduate work grades are indicated as: *A*, excellent; *B*, satisfactory (graduate level); *C*, passing; *F*, failing; *I*, incomplete; *W*, authorized withdrawal; *CR* indicates credit. Grades *A*, *B*, *C*, and *F* are counted in computing the quality-point index (see page 34).

A quality-point index of 3.00 is required for graduation. Students who receive the grade of *C* in more than two courses are subject to suspension. Students who receive a grade of *F* must confer with the Dean of the School of Education before enrollment for further work.

Whenever a grade has not been assigned, the symbol *I* (incomplete) or the symbol *W* (authorized withdrawal) will be recorded. The symbol *I* indicates that a satisfactory explanation has been given to the instructor for the student's failure to complete the required work of the course. An "incomplete" cannot be made up after the lapse of one calendar year except by written permission of the Dean's Council. An incomplete which is not removed within one calendar year is automatically changed to an *F*. An incomplete cannot be removed by reregistering for the course.

## THE THESIS

The choice of the thesis subject must be approved in writing by the student's adviser and filed in the Office of the Dean no later than the date announced in the University calendar. A statement of the School of Education standards for the thesis and printed copies of detailed regulations regarding the form and reproduction of the thesis are available in the Office of the Dean.

Payment of tuition for the thesis entitles the candidate, during the period of registration, to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional calendar year may be granted without further tuition payment. The student must, however, maintain continuous registration (see page 36) during this period. If the preparation of the thesis extends beyond the additional calendar year, the student must register for the entire 6 hours of thesis again and pay tuition as for a repeated course.

## MASTER'S COMPREHENSIVE EXAMINATION

In addition to the course examinations, the candidate must pass a special three-hour examination on his area of specialization. Candidates for the examination must be registered for the semester it is to be taken, and must file a written application in the Office of the School of Education not later than thirty days prior to the date of the examination.



## **The Degree of Education Specialist**

THE SCHOOL OF EDUCATION PROVIDES A PROGRAM of advanced study leading to the degree of Education Specialist for students with Master's degrees in Education who seek further professional preparation for specific objectives.

### **ENTRANCE REQUIREMENTS**

The degree of Master of Arts in Education from this University, or the equivalent; a satisfactory score on the Graduate Record Examination; and two years of successful pertinent experience.

### **ADMISSION TO CANDIDACY**

Each applicant must be interviewed and recommended by a staff member of the School of Education or by a representative in the candidate's locality appointed by the Dean.

### **SCHOLARSHIP**

Scholarship requirements for the degree of Education Specialist are the same as those for the degree of Master of Arts in Education, see page 103.

### **PROGRAMS OF STUDY AND DEGREE REQUIREMENTS**

Individual programs are developed, through the faculty-adviser plan, to fit the candidates' abilities, interests, needs, and career goals. Thirty semester hours beyond the requirements of the degree of Master of Arts in Education at this University are required. At least 21 hours of this work must be taken on campus at this University. A maximum of five calendar years is allowed for completion of the program.

At least 12 of the required 30 hours must be in appropriate graduate courses in Education selected from the following areas: (1) foundations and cognate study, (2) background and general principles of the field of study, (3) an area of specialization.

### **THE COMPREHENSIVE EXAMINATION**

Successful completion of two three-hour written examinations is required.

### **THE ORAL EXAMINATION**

The final oral examination must be passed at least three weeks before the degree is to be conferred. The examination committee consists of members of the staff of the Department of Education and at least one successful practitioner in the appropriate area of specialization, appointed by the Committee on Graduate Studies of the School.



## **The Degree of Doctor of Education**

THE SCHOOL OF EDUCATION OFFERS PROGRAMS of advanced study leading to the degree of Doctor of Education. These programs, which are under the supervision of the Committee on Graduate Studies, provide major fields of study in elementary education, secondary education, adult education, human growth and development, history of education, philosophy of education, administration and supervision, elementary administration, secondary administration, curriculum, special education, guidance and counseling, research and evaluation, teacher education, and employee development. Supporting fields are available in higher education, comparative education, and administrative specialties. All programs require study of interrelated areas of education and a doctoral dissertation in the major field of study. In general, from two to three years of full-time study beyond the degree of Master of Arts in Education is required. Programs are individually planned. It is estimated that, for the average student, the work required for the total program will be 66 semester hours.

Students not registered for doctoral study under the payment plan in effect prior to July 1, 1967, are required to register for a minimum hour-load (see pages 22-23).

Each program is divided into two parts. The first consists of preparation for comprehensive examinations in each of four supporting fields and a major field of study. The second is composed of research investigation, the writing of a dissertation, and the final oral examination.

### **ADMISSION**

The applicant must have adequate preparation for advanced study, including graduate work in fields prerequisite to his objective equivalent to that required for the degree of Master of Arts in Education at this University, at least three years of successful pertinent educational experience, acceptable personal qualities, and a capacity for creative scholarship and effective leadership.

The applicant first arranges for an interview with the Assistant Dean for advanced graduate studies to explore his needs in relation to the resources of the School and to guide him in his application for doctoral study.

To be admitted to study for the degree, the applicant must be accepted by the Committee on Graduate Studies on the basis of previous scholastic and professional record; prescribed admission tests, including the Aptitude Test of the Graduate Record Examination; personal conferences with at least three faculty members, including the professor under whom the applicant wishes to work; and a group interview with the Committee on Graduate Studies. When the applicant meets with the Committee on Graduate Studies, he should be prepared to present an outline of his plan of study, including the selection of major and supporting fields.

### **COMPREHENSIVE EXAMINATIONS**

When the student is admitted to doctoral candidacy, he is assigned to a committee, each member of which is responsible for guiding him in his preparation for one of the four required comprehensive examinations in supporting fields or the comprehensive major field examination. The candidate must arrange individual conferences with the committee members to determine the content



of each field and to receive guidance in his preparation for the examination. All candidates are required to complete Education 296 during the first or second semester of candidacy.

The supporting field examinations, which are taken first, are six-hour written examinations. A tool-subject requirement may be established by the candidate's dissertation committee if it is necessary for the successful completion of his dissertation. This requirement must be completed prior to the major field examination. The major field examination is a written twelve-hour examination, six hours on each of two successive days.

The candidate begins the second part of his program after the satisfactory completion of all supporting field examinations; the tool subject, if required; and the major field examination.

### THE DISSERTATION

A dissertation is required as evidence of ability to perform scholarly research and to interpret and present its results.

During the first part of the program, the Dean appoints a Dissertation Committee, consisting of a Master in Research, usually the major field adviser, and two additional faculty members who serve as readers. When admitted to the second part of the program, the candidate is required to submit a proposal for his dissertation to this Committee, which determines its acceptability and recommends approval to the Committee on Graduate Studies. The dissertation is completed under the direction of the Dissertation Committee.

No later than the date specified in the calendar the candidate must submit to the Dean three complete copies of the dissertation and two original copies of an abstract (not to exceed 600 words) of his dissertation. One copy of the abstract is for inclusion in the Abstracts of Doctoral Dissertations issue of the University Bulletin; the other is sent to University Microfilms, Inc., for inclusion in their monthly publication "Dissertation Abstracts," which is distributed nationally.

One copy of the dissertation is also sent to University Microfilms, Inc., where the master negative microfilm is retained. A positive microfilm copy is sent by University Microfilms, Inc., to the Library of Congress for its file. Printed copies of detailed regulations regarding the form and reproduction of the dissertation, preparation of the abstract, and services offered by University Microfilms, Inc., are available in the Office of the Dean. The successful candidate for the doctorate is required, before receiving his degree, to pay a fee to cover the expense of printing the abstract of his dissertation, and for the basic service rendered by University Microfilms, Inc. Accepted dissertations, with accompanying drawings, become the property of the University and are deposited in the University Library, where the duplicate copies are bound and made available for circulation. Permission to publish or adapt material in them must be secured from the Dean.

### THE FINAL EXAMINATION

When the dissertation has been accepted, the Master in Research recommends the candidate to the Dean for the final oral examination, which must be passed at least three weeks before the degree is to be conferred. The examination is open to the public and is conducted by a committee of the Faculty appointed by the Dean, supplemented by at least two leaders in the candidate's field of



study from outside the University. Candidates who successfully pass the oral examination are recommended for the degree by the Faculty of the School of Education.

#### **RESIDENCE AND CONTINUOUS STUDY**

All the preparation for the degree must be done in residence. The student must remain registered in the School of Education, except when the Committee on Graduate Studies has granted a leave of absence. Failure to register each semester of the academic year may result in lapse of candidacy. Subsequent readmission is subject to whatever new conditions and regulations have been established by the Committee on Graduate Studies.

There is no formal regulation concerning the minimum amount of time to be spent in preparation for the minor and supporting field examinations or as a candidate engaged in doctoral research. The supporting and major field examinations, however, must be completed within five years of the date of admission, and the entire program must be completed within eight years, regardless of full-time or part-time study. Each candidate is required to complete one semester or more of his program in full-time study. Full-time study of six weeks or more in each of two Summer Sessions is equivalent to full-time study for one semester.

### **Special Programs and Services**

#### **SPECIAL PROGRAM IN ELEMENTARY TEACHER EDUCATION**

THE SCHOOL OF EDUCATION OFFERS AN INTENSIVE fifth-year program, supported by a grant from the Ford Foundation, designed to prepare outstanding graduates of accredited liberal arts colleges for teaching in elementary schools. Successful fulfillment of the program's requirements provides the professional courses necessary for certification as an elementary teacher. Students may receive the degree of Master of Arts in Teaching on completion of the program or receive credit for 15 semester hours of graduate work toward the degree of Master of Arts in Education.

Limited tuition aid is available. Grants-in-aid, in amounts justified by need, are awarded to candidates by the Selection Committee. For details, write to Program Director, Special Program in Elementary Teacher Education, The George Washington University, Washington, D.C. 20006.

#### **ADMISSION TO THE PROGRAM**

To be admitted as a student-intern, an applicant must (1) have a Bachelor's degree from an accredited liberal arts institution, including courses which will meet the general education requirements for teacher certification, (2) show evidence of interest in children and a sincere desire to teach, (3) submit three written references attesting to quality of academic record and personality, (4) submit a score on the Aptitude Test of the Graduate Record Examination, and



(5) be interviewed by the University Selection Committee, or under arrangements specified by the Committee and approved by the Dean of the School of Education.

#### PLAN OF STUDY

The program of study begins with a six-week summer session and continues through the first twelve weeks of the fall semester. Course work during this time is planned to help each student gain understanding of (1) the characteristics of elementary school children, (2) the subject-matter areas of the elementary school curriculum, (3) basic dimensions of teaching methodology, (4) the relationship between educational theory and methods, (5) educational tests and measurements, and (6) the role of the school in American society.

During the last six weeks of the fall semester, students will be given full-time student teaching assignments in a nearby public school. This part of the program will permit the student to use, in an actual teaching situation, the educational theories and methods which he has been studying. It is accompanied by a weekly on-campus seminar.

A salaried internship during the spring semester in one of the cooperating school systems in the area gives the student an opportunity to assume the responsibilities of a beginning teacher, with the help and guidance of University and public school staff members. Seminar meetings will be scheduled weekly for discussion of common problems and for cooperatively planned work on individual and group needs of interns.

#### EDUCATION OF TEACHERS OF EXCEPTIONAL CHILDREN

The School of Education offers a program for the education of teachers of exceptional children who are mentally retarded, emotionally disturbed, and crippled or otherwise health impaired. Laboratory experiences are arranged in schools for handicapped children in the metropolitan area. Students are accepted at the senior-year undergraduate, Master's, Education Specialist, and Doctoral levels. By special permission, teachers, school administrators, and adequately prepared students from other schools and colleges of the University may elect these courses.

Inquiries concerning the program and the availability of scholarships and fellowships should be directed to Dr. Perry Botwin, Department of Special Education, The George Washington University, Washington, D.C. 20006.

#### CERTIFICATION CURRICULA

The School of Education provides individually planned programs for liberal arts graduates and for housewives and retired military personnel with appropriate degrees who wish to prepare for teaching. Those seeking certification, but not wishing to work for a degree, may enroll in a certification program if they meet the admission, scholarship, and personality requirements of degree candidates. The School also provides a wide range of courses of interest to teachers who wish to renew licenses.

#### READING CENTER

(See pages 42-43.)



## SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION

Dean J.C. Dockeray

Assistant Dean for Special Projects E.J.B. Lewis

### FACULTY—ACADEMIC YEAR 1966-67

*Professors* C.E. Bradley, H.F. Bright, D.S. Brown, J.W. Coughlan, J.C. Dockeray, R.B. Eastin, R.F. Ericson, F.H. Gibbs, Leon Gintzig, J.L. Jessup, E.H. Johnson, Julian Kulski, E.J.B. Lewis, G.L. Lippitt, S.M. Rosen (*Visiting*), Waldo Sommers, K.E. Stromsem, Edwin Timbers

*Associate Professors* E.W. Camp, D.R. Cloutier, H.C. Demoady, F.C. Kurtz, E.R. Magruder, J.F. McCarthy, Jr., H.R. Page, R.C. Sedwick, J.H. Walters, Jr.

*Assistant Professors* Elizabeth Adams, R.A. Barrett, G.F. Conner, M.G. Gallagher, P.D. Grub, R.F. Hartley, R.F. Jacobsen, P.B. Jones, John Norton, Chei-Min Paik, Frank Puntenney, Jr., J.R. Rizzo, F.S. Rojo, J.R. Roman, Jr., M.R. Skigen, L.C. Smith, J.L. Thompson, Jr.

### COMMITTEES\*

#### DEAN'S COUNCIL

J.C. Dockeray (*Chairman*), F.H. Gibbs, E.J.B. Lewis, E.R. Magruder, H.R. Page, K.E. Stromsem

#### COMMITTEE ON CURRICULUM

Leon Gintzig (*Chairman*), D.R. Cloutier, J.W. Coughlan, E.R. Magruder, J.F. McCarthy

#### COMMITTEE ON DOCTORAL STUDIES IN BUSINESS ADMINISTRATION AND PUBLIC ADMINISTRATION

R.F. Ericson (*Chairman*), D.R. Cloutier, Leon Gintzig, E.H. Johnson, Chei-Min Paik, S.M. Rosen

\*The Dean of the School is an ex officio member of all committees.



## INTRODUCTION

The study of Government was first organized as a separate entity in the University in 1898 with the establishment of the School of Comparative Jurisprudence and Diplomacy. In 1928, this School was reorganized and broadened as the School of Government. During the next two decades, programs in business administration and public administration were added, and the emphasis gradually shifted from undergraduate to graduate study. The name was changed in 1960 to the School of Government, Business, and International Affairs to reflect more accurately the offerings of the School. A division of the School was effected in 1966, and two schools were established—the School of Government and Business Administration, a primarily professionally-oriented school; and the School of Public and International Affairs, a primarily policy-oriented school.

Programs of the School of Government and Business Administration include examination of administrative principles and the quantitative approaches to decision making common to both business and government. These programs stress the points at which major policy decisions of either business or government must give consideration to related policy decisions of the other. Emphasis is placed upon the fact that management education is not limited to organizational techniques but is, in its broadest sense, education for management responsibility.

Students in the freshman and sophomore years are registered in the lower division of Columbian College of Arts and Sciences, the liberal arts college of the University. Here they are assigned special advisers from this School to assist them in planning their programs.

## ACADEMIC PROGRAMS

Programs in the fields of Accounting, Business Administration, Business and Economic Statistics, Health Care Administration, International Business, Personnel Administration, Public Administration, and Urban and Regional Planning are all available within the School of Government and Business Administration.

## OBJECTIVES

The School of Government and Business Administration offers programs to equip students for eventual senior administrative responsibility in government and business. The development of mid-career programs for executives has become a further objective of national significance.

## ACADEMIC STATUS

The School of Government and Business Administration has maintained full membership in the Middle Atlantic Association of Colleges of Business Administration since 1961. The programs in Public Accounting designed to prepare students for Certified Public Accountants examinations have been approved by the state boards of New York and of Maryland. The program in Hospital Administration has been accredited by the Association of University Programs in Hospital Administration since 1962.



## REGULATIONS

*Regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES are stated on pages 15-26; other University regulations, on pages 33-36.*

### ATTENDANCE

A student may not attend classes until registration is completed and fees due are paid. A student may be dropped from any course for undue absence.

The student is held responsible for all the work of the courses in which he is registered, and all absences must be excused by the instructor in charge before provision is made for him to make up the work missed.

A student suspended for any cause may not attend classes during the period of suspension.

### INDEPENDENT STUDY PLAN

A student of *demonstrated capacity*, with a special interest in the subject matter of a course, may be permitted to undertake study under the personal direction of an instructor, in accordance with the rules of the appropriate department. Credit under this plan is limited to the specific course credits normally allowed when taken on a class basis.





## **Bachelor of Business Administration**

THE SCHOOL OFFERS PROGRAMS leading to the degree of Bachelor of Business Administration in the fields of Accounting, Business Administration, Business and Economic Statistics, and International Business.

### **ENTRANCE REQUIREMENTS**

The satisfactory completion of the *Accounting and Business Administration* or the *Business and Economic Statistics* curriculum in the lower division of Columbian College of Arts and Sciences (see page 67), or the equivalent is required.

### **REQUIREMENTS FOR THE DEGREE**

#### **ACADEMIC WORK LOAD**

A full-time student not on probation may not ordinarily take more than 15 semester hours. A student employed more than 24 hours a week, who is not on probation, may not take more than 9 semester hours.

A full-time student whose quality-point index is 3.50 or higher may take not more than 18 semester hours. A student employed more than 24 hours a week, whose index is 3.50 or higher, may take up to 12 semester hours.

A student who accepts employment after registration or at any time during a semester must report immediately to the Dean, so that his program may be adjusted if necessary.

Exception to these rules will require the approval of the Dean.

#### **SCHOLARSHIP**

In order to graduate, a student must have the following: (1) a general quality-point index of at least 2.00 and (2) an index in his major of at least 2.50. The major includes the required courses and courses taken in the group options.

#### **DEAN'S HONOR LIST**

The names of students who achieve a quality-point index of 3.50 or higher are placed on the Dean's Honor List for that semester. Appearance on the List will be limited to (1) full-time students registered for a minimum of 12 semester hours and (2) part-time students registered for a minimum of 12 semester hours over a period of two consecutive semesters, which may include a summer term.

#### **PROBATION**

A student whose quality-point index falls below 2.00 after completing a minimum of 12 semester hours of study, will be placed on probation. This proba-



tion extends over the period in which the student attempts 12 semester hours of work which may include remedial studies as prescribed.

#### SUSPENSION

A student whose quality-point index is 1.50 or below or whose index remains below 2.00 at the end of his probationary period may be suspended. A student suspended for poor scholarship may apply for readmission after an interval of one calendar year. To be considered for readmission, he must pass prescribed tests and submit evidence to the Dean's Council that during his absence from the University he has so conducted himself as to indicate that he will profit by readmission. A student readmitted after suspension is on probation and must maintain a current quality-point index of at least 2.50 on each 12 semester hours of work undertaken until his cumulative index is 2.00. In no case will the probationary period after readmission exceed 24 hours of study. A student suspended twice for poor scholarship will not be readmitted.

#### RESIDENCE

*A minimum of 30 semester hours, including at least 12 hours in the major field, must be completed while registered in the School of Government and Business Administration.* This requirement applies to students transferring within the University as well as to students transferring from other institutions. Summer work may be counted toward the residence requirement, but in no case may the period of residence aggregate less than thirty weeks. Unless special permission is granted by the Dean to pursue work elsewhere, the work of the senior or final year must be completed in the School of Government and Business Administration.

#### USE OF CORRECT ENGLISH

Any student whose written or spoken English in any course is unsatisfactory may be reported by the instructor to the Dean. The Dean may assign supplementary work, without academic credit, varying in amount with the needs of the student. If the work prescribed is equivalent to a course, the regular tuition fee is charged. The granting of a degree may be delayed for failure to make up any such deficiency in English to the satisfaction of the Dean.

#### CORRESPONDENCE AND HOME-STUDY COURSES

Credit for correspondence or home-study courses is not acceptable and cannot be applied toward a degree.

#### CURRICULUM REQUIREMENTS

To be recommended by the Faculty for graduation, candidates are required to complete, in addition to the appropriate freshman and sophomore work, a minimum of 60 semester hours during the junior and senior years, as set forth in one of the following curricula.



## EXAMINATIONS FOR WAIVING CURRICULUM REQUIREMENTS

A required course may be waived by the satisfactory passing of a waiver examination authorized and prescribed by the department or curriculum adviser concerned. Passing this examination does not entitle the student to any hours of credit toward the degree. Request to take the examination should be made to the curriculum adviser and the required fee paid at the Office of the Cashier before the date set for the examination.

## MAJOR FIELDS FOR THE BACHELOR'S DEGREE

Candidates for the degree of Bachelor of Business Administration must have completed the requirements of the Columbian College of Arts and Sciences Lower Division in the relevant curriculum (Accounting and Business Administration\*, page 67); Business and Economic Statistics, page 67; or the equivalent.

## ACCOUNTING

For the first two years of the Accounting curriculum, see page 67.

Programs are offered in three areas of professional specialization: (1) Managerial Accounting in Business; (2) Federal Financial Management—Accounting and Budgeting; and (3) Public Accounting.

*Required—Junior and Senior Years*

	Semester Hours
Acct 101: Cost Accounting .....	3
Acct 121-22: Intermediate Accounting.....	6
Acct 161: Federal Income Taxation.....	3
Acct 171: Auditing .....	3
B Ad 102: Fundamentals of Management.....	3
B Ad 131: Business Finance .....	3
B Ad 161: Commercial Law: Contracts, Sales, Agency, and Bailments	3
B Ad 162: Commercial Law: Negotiable Instruments, Property, Mort-	
gages .....	3
Econ 121: Money and Banking.....	3
Area of	
Professional	
Specialization: .....	15
Elective: To be selected in consultation with the adviser at the be-	
ginning of the junior year.....	15
Total.....	60

All Accounting majors must complete the *required* courses listed above, plus one of the following 15 semester-hour areas of professional specialization. Special programs and elective courses may be arranged in consultation with the Department of Accounting.

\* Majors in International Business follow the curriculum in Accounting and Business Administration.



## GROUP I: MANAGERIAL ACCOUNTING IN BUSINESS

Students preparing for careers in managerial accounting in business may specialize in a particular area of accounting, such as systems, budgeting, or income tax, or may concentrate on broadening their backgrounds in business administration or in more general fields of knowledge. The Managerial Accounting program thus provides maximum flexibility for students who wish to combine basic training in accounting with other career interests, in preparation either for general business responsibilities or in preparation for more specific careers in the financial management field.

Courses relating to Managerial Accounting to be selected with the approval of the adviser (may not include Accounting courses in excess of 9 hours).

## GROUP II: FEDERAL FINANCIAL MANAGEMENT—ACCOUNTING AND BUDGETING

Students preparing for careers in financial management in the Federal Government may combine basic professional training in accounting with more specialized training in the financial management techniques used in administering the complex affairs of modern-day government. A flexible program can be developed in keeping with the specific career objectives of the individual student by the careful selection of electives.

Courses relating to Federal Financial Management to be selected with approval of the adviser (may not include Accounting courses in excess of 9 hours).

## GROUP III: PUBLIC ACCOUNTING

The Public Accounting program is a concentrated professional curriculum designed to prepare students for careers in public accounting. It combines the maximum number of professional accounting courses consistent with the broad educational background essential to successful Accounting careers in the modern business world.

Courses relating to Public Accounting to be selected with approval of the adviser.

## BUSINESS ADMINISTRATION

For the first two years of the Business Administration curriculum, see page 67.

The program in Business Administration is designed to provide the broad foundation required for eventual top leadership in either governmental or business administration. It consists of the 30 semester hours of *required* courses; 15 hours in one of the following group options; and 15 hours of electives, normally advanced courses in liberal arts subjects.

*Required—Junior and Senior Years*

	Semester Hours
Acct 193: Business Budgeting .....	3
B Ad 102: Fundamentals of Management.....	3
B Ad 105: Personnel Management .....	3
B Ad 131: Business Finance .....	3
B Ad 141: Basic Marketing Management.....	3
B Ad 161: Commercial Law: Contracts, Sales, Agency, and Bailments	3
B Ad 162: Commercial Law: Negotiable Instruments, Property, Mort- gages .....	3
B Ad 191: Business Reports and Analyses.....	3
B Ad 198: Case Problems in Management.....	3



	Semester Hours
Econ 121: Money and Banking.....	3
Group Option: To be selected from one of the following groups.....	15
Elective: To be selected in consultation with the adviser.....	15
Total.....	60

## GROUP OPTIONS

Eight areas of specialization are open to Business Administration majors. The 15 hours taken in each of these options require the approval of the adviser. The group option and the individual courses within the option should be selected *no later than the beginning of the second semester of the junior year.*

## GROUP I: PERSONNEL MANAGEMENT

The following courses provide the basic academic foundation for such positions as personnel manager, employee relations manager, and employment manager in business and government service.

- B Ad 106: Problems in Personnel Management
- B Ad 107: Collective Bargaining
- B Ad 118: Introduction to Data Processing
- B Ad 181: Manufacturing Production
- B Ad 193: Management Communication
- B Ad 195: Controllershship
- Jour 145: Principles and Problems of Public Relations
- Psyc 129: Motivational Factors in Personality
- Psyc 131: Psychological Tests
- Psyc 144: Personnel and Industrial Psychology
- Sp&D 121: Group Discussion and Conference Leadership

## GROUP II: FINANCE

The following courses provide the basic academic foundation for such positions as credit analyst, supervisor in a financial institution, bond cashier, trust officer, bank examiner, and similar positions in federal or international financial institutions.

- Acct 111: Financial Statement Analysis
- Acct 121-22: Intermediate Accounting
- B Ad 113: Real Estate
- B Ad 118: Introduction to Data Processing
- B Ad 121: Fundamentals of Insurance
- B Ad 136: Credit Management
- B Ad 138: Investments
- B Ad 163: Law in Relation to the Form of Business Units:  
Corporations, Partnerships, and Trusts
- B Ad 181: Manufacturing Production
- Econ 101: Intermediate Microeconomic Theory
- Econ 105: Business Fluctuations and Forecasting



## GROUP III: MARKETING

The following courses provide the basic academic foundation for such positions as sales manager, circulation manager, route superintendent, product development manager, buyer, promotion manager, and purchasing agent.

- B Ad 118: Introduction to Data Processing
- B Ad 136: Credit Management
- B Ad 143: Marketing Research
- B Ad 145: Sales Management
- B Ad 147: Advertising
- B Ad 158: Physical Distribution Management
- B Ad 171: Principles of Transportation
- B Ad 175: Introduction to Foreign Trade
- B Ad 176: International Business Theory and Policy
- B Ad 178: Management of International Business Operations
- B Ad 181: Manufacturing Production
- B Ad 195: Controllership
- Econ 101: Intermediate Microeconomic Theory
- Econ 105: Business Fluctuations and Forecasting
- Jour 145: Principles and Problems of Public Relations
- Stat 111-12: Business and Economic Statistics I-II

## GROUP IV: CONTROLLERSHIP

The following courses provide the basic academic foundation for the position of controller in business and government service.

- Acct 101: Cost Accounting
- Acct 111: Financial Statement Analysis
- Acct 121-22: Intermediate Accounting
- Acct 181: Accounting Systems
- Acct 191: Advanced Accounting
- B Ad 109: Office Management
- B Ad 113: Real Estate
- B Ad 118: Introduction to Data Processing
- B Ad 119: Data Processing Programming
- B Ad 121: Fundamentals of Insurance
- B Ad 163: Law in Relation to the Form of Business Units: Corporations, Partnerships, and Trusts
- B Ad 171: Principles of Transportation
- B Ad 195: Controllership
- Econ 105: Business Fluctuations and Forecasting
- Econ 165: Government and Business
- Stat 111-12: Business and Economic Statistics I-II

## GROUP V: ECONOMICS

The following courses provide the basic academic foundation for such positions as financial economic analyst, industrial economic analyst, and market research analyst in business and government.

- B Ad 107: Collective Bargaining
- B Ad 118: Introduction to Data Processing



- B Ad 171: Principles of Transportation
- B Ad 172: Public Utilities
- Econ 101: Intermediate Microeconomic Theory
- Econ 102: Intermediate Macroeconomic Theory
- Econ 105: Business Fluctuations and Forecasting
- Econ 161-62: Public Finance
- Econ 165: Government and Business
- Econ 181-82: International Economics
- Geog 125: Transportation Complexes
- Stat 111-12: Business and Economic Statistics I-II

## GROUP VI: STATISTICS

The following courses provide the basic academic foundation for such positions as financial statistician, planning statistician, industrial statistician, and rate analyst in business and government.

- B Ad 118: Introduction to Data Processing
- Stat 91: Principles of Statistical Methods
- Stat 110: Quality Control and Reliability Techniques
- Stat 111-12: Business and Economic Statistics I-II
- Stat 117: Analysis of Variance
- Stat 118: Correlation and the Chi-square Test I
- Stat 155: Introduction to Probability
- Stat 157-58: Introduction to Mathematical Statistics

## GROUP VII: TRANSPORTATION AND TRAFFIC MANAGEMENT

The following courses provide the basic academic foundation for management positions in transportation firms and in traffic departments of other types of business firms and government agencies. The program should also aid in the preparation for the examinations for membership in the American Society of Traffic and Transportation.

- B Ad 118: Introduction to Data Processing
- B Ad 158: Physical Distribution Management
- B Ad 171: Principles of Transportation
- B Ad 172: Public Utilities
- B Ad 173: Transportation Systems Management
- B Ad 174: Urban Transportation
- B Ad 175: Introduction to Foreign Trade
- Econ 101: Intermediate Microeconomic Theory
- Geog 125: Transportation Complexes
- Hist 179-80: Economic History of the United States
- Stat 111: Business and Economic Statistics I

## GROUP VIII: AUTOMATIC DATA PROCESSING

The following courses provide the basic academic foundation for positions in data processing in government, business, and industry. They also give the student an understanding of the manager's use of data processing as a vital managerial technique.

- B Ad 118: Introduction to Data Processing
- B Ad 119: Data Processing Programming



B Ad 120: Data Processing Systems  
 Stat 111-12: Business and Economic Statistics I-II

### BUSINESS AND ECONOMIC STATISTICS

For the first two years of the Business and Economic Statistics curriculum, see page 67.

The undergraduate program in Business and Economic Statistics is designed as preparation for business and economic analysis. It consists of 30 semester hours of *required* courses and 30 hours of electives from Accounting, Business Administration, Economics, and Statistics.

#### *Required—Junior and Senior Years*

	Semester Hours
B Ad 102: Fundamentals of Management.....	3
B Ad 131: Business Finance or 141: Basic Marketing Management.....	3
B Ad 161: Commercial Law: Contracts, Sales, Agency, and Bailments	3
B Ad 162: Commercial Law: Negotiable Instruments, Property, Mort- gages .....	3
B Ad 191: Business Reports and Analyses.....	3
Econ 101: Intermediate Microeconomic Theory.....	3
Econ 102: Intermediate Macroeconomic Theory.....	3
Econ 105: Business Fluctuations and Forecasting.....	3
Stat 111-12: Business and Economic Statistics I-II.....	6
Elective (A): To be selected from Statistics.....	18
Elective (B): To be selected in consultation with the adviser.....	12
Total.....	60

### INTERNATIONAL BUSINESS

This program is designed to provide the basic academic foundation for positions in international business, both in private industry and in government. It consists of 30 semester hours of *required* course work and 30 hours of electives. Any modification of the program must be made with the consent of the adviser.

#### *Required—Junior and Senior Years*

	Semester Hours
B Ad 102: Fundamentals of Management.....	3
B Ad 131: Business Finance .....	3
B Ad 132: International Business Finance.....	3
B Ad 141: Basic Marketing Management.....	3
B Ad 144: International Marketing Management.....	3
B Ad 161: Commercial Law: Contracts, Sales, Agency, and Bailments	3
B Ad 175: Introduction to Foreign Trade.....	3
B Ad 176: International Business Theory and Policy.....	3
B Ad 178: Management of International Business Operations.....	3
Econ 121: Money and Banking.....	3
Elective: Selected from the following in consultation with adviser....	30
Total.....	60



## ELECTIVES

The 30 hours of elective courses are to be selected from the following, in consultation with the adviser.

- Acct 193: Business Budgeting
- B Ad 143: Marketing Research
- B Ad 158: Physical Distribution Management
- B Ad 162: Commercial Law: Negotiable Instruments, Property, Mortgages
- B Ad 171: Principles of Transportation
- B Ad 173: Transportation Systems Management
- B Ad 174: Urban Transportation
- B Ad 177: Foreign Markets
- B Ad 191: Business Reports and Analyses
- B Ad 193: Management Communication
- B Ad 195: Controllorship
- Econ 101: Intermediate Microeconomic Theory
- Econ 181-82: International Economics
- Geog 126: World Economic Geography
- Geog 151-166: Regional survey courses
- P Sc 167: U. S. Foreign Policy
- P Sc 181-82: Public International Law and Organization
- Stat 111-12: Business and Economic Statistics I-II

## The Master's Degrees

### Master of Business Administration

PROGRAMS LEADING TO THE DEGREE of Master of Business Administration are offered in the following fields:

- |                            |                          |
|----------------------------|--------------------------|
| Accounting                 | International Business   |
| Business Administration    | Personnel Administration |
| Health Care Administration |                          |

### Master of Public Administration

Programs leading to the degree of Master of Public Administration are offered in the following fields:

- |                            |                             |
|----------------------------|-----------------------------|
| Health Care Administration | Public Administration       |
| Personnel Administration   | Urban and Regional Planning |

### Master of Arts in Government

Programs leading to the degree of Master of Arts in Government are offered in the following fields:

- |                                  |                             |
|----------------------------------|-----------------------------|
| Business and Economic Statistics | Public Administration       |
| Personnel Administration         | Urban and Regional Planning |



### ENTRANCE REQUIREMENTS

A Bachelor's degree from an accredited college or university, with a quality-point index of 3.00 (a *B* average) in the relevant undergraduate field, is required.

Arrangement for required tests is the responsibility of the applicant and should be made with the Educational Testing Service, Princeton, N.J. 08540. Correspondence concerning the Admission Test for Graduate Study in Business should be addressed to Box 966; concerning the Graduate Record Examination, to Box 955.

#### MASTER OF BUSINESS ADMINISTRATION

Applicants for admission to programs leading to the degree of Master of Business Administration must submit scores on the Admission Test for Graduate Study in Business administered by the Educational Testing Service.

#### MASTER OF PUBLIC ADMINISTRATION

Applicants for admission to programs leading to the degree of Master of Public Administration must submit scores on the Admission Test for Graduate Study in Business or the Graduate Record Examination administered by the Educational Testing Service.

#### MASTER OF ARTS IN GOVERNMENT

Applicants for admission to programs leading to the degree of Master of Arts in Government must submit scores on the Graduate Record Examination administered by the Educational Testing Service.

### GENERAL REQUIREMENTS

A 3.00 average in the undergraduate major is normally required for admission to graduate study. Deficiency in undergraduate preparation may be satisfied by taking specified undergraduate courses and maintaining a 3.00 average in such courses.

Master's degrees are awarded by vote of the Faculty on completion of the required course work, an acceptable thesis or the equivalent, and the passing of the Master's Comprehensive Examination. An applicant whose background does not include the necessary courses must take a program longer than the minimum hours required.

Second-group courses (numbered 101-200) may be counted toward the Master's degree, only when registration for graduate credit has been approved at the beginning of the course by the curriculum adviser. No work counted toward a Bachelor's degree may also be counted toward a Master's degree.

All work for a Master's degree must be completed in five years, unless an extension of time is granted by the Dean.

A student who expects to continue his studies for the degree of Doctor of Business Administration or Doctor of Public Administration after receiving the



Master's degree should ask for assistance in planning his program so that he may qualify for admission to candidacy for the Doctorate.

No credit is granted for work done *in absentia* or without formal instruction, except for hospital residency and the thesis, which may be completed *in absentia* with the permission of the department, curriculum adviser, or committee concerned.

#### MASTER'S COMPREHENSIVE EXAMINATION

In addition to individual course examinations the candidate must pass a general written Master's Comprehensive Examination. In writing the examination the student is expected to correlate what he has learned in his course work and his reading in the literature of his fields. The examination normally requires from seven to nine hours writing time. Sections broadly cover the various fields in which the candidate has prepared himself.

The examinations are scheduled two times a year, in December and April, and should be taken during the last semester of course registration or shortly after completion of the prescribed course work. If there is a lapse of time between completion of course work and the taking of the examination, the student must maintain continuous registration and must be registered for the semester in which the examination is taken.

The candidate should consult with his adviser, well in advance, as to the dates of his examination and the definition of the subject-matter fields which his examination is to cover. A written application is filed, in the form prescribed, with the Office of the Dean not later than thirty days prior to the examination.

A candidate who fails the examination may, in exceptional circumstances and with specific approval of his advisers, repeat the examination, but only after the lapse of one semester and the undertaking of additional preparation as prescribed. *If he fails a second time, no further opportunity to take the examination will be permitted.*

#### SCHOLARSHIP

Grades for graduate work are *A*, outstanding; *B*, high quality; *C*, minimum quality; *F*, failure; and *I*, incomplete. *CR* indicates credit.

An average of *B* or better is required for the Master's degree. The grade of *C* is not considered as failing but must be counter-balanced by a grade of *A* in a graduate course of equal status.

A Master's candidate who receives a grade of *F* is required to present cause for consideration by the Dean's Council as to why he should be allowed to continue his studies.

Whenever a grade has not been assigned, the symbol *I* (incomplete) or the symbol *W* (authorized withdrawal) will be recorded. The symbol *I* indicates that a satisfactory explanation has been given to the instructor for the student's failure to complete the required work of the course. An "incomplete" cannot be made up after the lapse of one calendar year except by written permission of the Dean's Council. An incomplete which is not removed within one calendar year is automatically changed to an *F*. An incomplete cannot be removed by reregistering for the course.



**REQUIRED COURSES IN ADMINISTRATION (Certain Fields)**

The following courses in general administrative theory and practice are *required* of all candidates for the degree of Master of Public Administration and Master of Business Administration, except in the fields of Accounting and Urban and Regional Planning.

	Semester Hours
B&PA 201: Advanced Administrative Management.....	3
B&PA 204: Quantitative Factors in Administration.....	3
B&PA 207: Human Behavior in Organizations.....	3

In addition, each student is normally required to take, from the following group, the course appropriate to his specific area of concentration:

	Semester Hours
B Ad 297: Case Studies in Business Administration.....	3
HCA 206: Case Studies in Health Care Administration.....	3
P Ad 298: Case Studies in Public Administration.....	3

**THE THESIS**

The thesis subject should be selected as early as possible so as to permit effective integration with the course work.

The subject must be approved by the professor in charge and recorded in the Office of the Dean by the date announced in the calendar. The thesis in its final form must have the approval of the professor in charge and must be presented to the Dean by the student no later than the date announced in the calendar. Printed copies of detailed regulations regarding the form and reproduction of the thesis are available in the Office of the Dean.

Payment of tuition for the thesis entitles the candidate, during the two semesters he registers for thesis (299-300), to the advice and direction of the member of the Faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year is granted without further tuition payment. The student must, however, maintain continuous registration during this period. If the preparation of the thesis extends more than three semesters beyond the date he registers for thesis 300, the student must register for the entire 6 hours of thesis again and pay tuition as for a repeated course.

**MASTER OF BUSINESS ADMINISTRATION**

Curricula leading to the professional degree of Master of Business Administration are available in the fields of Accounting, Business Administration, Health Care Administration, International Business, and Personnel Administration.

The purpose of the programs leading to the degree of Master of Business Administration is to develop the analytical ability and perspective which will contribute to success as a responsible executive. Because of the increasingly close relationship between government and business, these programs also provide an excellent background for many government careers. To provide maximum flexibility, each student program is planned with an assigned faculty adviser.



An applicant must have a Bachelor's degree from an accredited college or university.

The degree is awarded by vote of the Faculty upon satisfactory passing of the Master's Comprehensive Examination, and the submission of an acceptable thesis. The complete program consists of 60 semester hours, 54 hours of course work and 6 of thesis; and students with *no* previous background in business administration or accounting are rarely advised to take the Master's Comprehensive Examination before completing 54 hours of course work. Students who have an undergraduate background in either business administration or accounting, however, are encouraged to take the Master's Comprehensive Examination as soon as the curriculum adviser believes they are prepared for it. A student who has completed an undergraduate major in accounting or in business administration with a good record may qualify under a minimum acceptable program of 30 hours, including the thesis. No more than 6 hours of graduate course credits can be transferred from other institutions and each transfer of credit must be approved by the Dean.

#### ACCOUNTING

The Master's programs in accounting are designed (1) for those who wish to pursue careers as professional accountants, (2) for those who wish to pursue careers of executive responsibility with emphasis on finance and accounting in either business or government, and (3) for those who wish to pursue careers as teachers of accounting. Programs are sufficiently flexible to meet individual student objectives; selection of courses is made in consultation with the adviser. The programs are available in three basic areas, professional accounting, governmental accounting, and managerial accounting.

#### BUSINESS ADMINISTRATION

The Master's programs in Business Administration are designed for those who wish to pursue responsible careers as administrators in either government or business.

Individual programs are planned in consultation with the adviser to fit the professional objectives of the student. The course work must include the *required* courses in administration (see page 123). Fields of study include administrative theory and practice, business economics, business-government relations, business statistics, controllership, data processing, finance and investments, human factors in administration, managerial accounting, marketing, operations research, personnel management, public administration, and transportation.

#### HEALTH CARE ADMINISTRATION

The programs in Health Care Administration lead to the degrees of Master of Business Administration or Master of Public Administration with areas of concentration in the administration of short-term hospitals, long-term care facilities, and health records. Ordinarily students are admitted only in the fall, but applicants with prerequisites to make up or pursuing special programs of study may be admitted in the spring semester or the summer term. The basic curriculum consisting of 60 hours of course work on campus is outlined under the



field of hospital administration. Electives appropriate to the field of concentration are selected from the special courses in long-term care administration and those in health records administration.

The Health Care Administration programs are designed to give students the opportunity of acquiring the knowledge, attitudes, and skills essential as foundations for growth into capable health care administrators.

Prerequisite: a Bachelor's degree from an accredited college or university is prerequisite to admission to all Health Care Administration programs. While a 3.00 (B) average in the undergraduate work is expected, in the selection of candidates considerable weight is given to personal qualifications, aptitude for the area of concentration selected, and practical experience. Hospital work experience is desirable but not required. Preadmission experience in a hospital is arranged on request or if otherwise indicated.

While no undergraduate major is specified, a desirable background for short-term hospitals and long-term facilities would include courses in accounting, biology, business administration, economics, psychology, sociology, statistics, and college algebra. A minimum of 6 semester hours of undergraduate accounting and 3 hours of statistics must be taken prior to admission to degree candidacy. Applicants with academic deficiencies may be permitted to enroll as special students subject to the satisfactory completion of prescribed courses beyond the minimum requirements for admission.

Master's candidates who may wish to continue for a doctorate should plan the Master's program accordingly, in consultation with their advisers.

#### HOSPITAL ADMINISTRATION

The program in Hospital Administration is divided into two phases. During the first phase the student must complete satisfactorily a minimum of 51 hours of course work, selected in accordance with his background needs. These courses cover the general and technical background of hospital administration, general administrative theory and practice, and problem solving in the area of management as it relates to short-term hospitals. The second phase is a calendar-year residency of on-the-job institutional training under qualified supervision, which carries 9 semester hours of credit. A written major report is required as a part of phase two.

Ordinarily full-time students can expect to complete the on-campus phase of the degree program in from two to four semesters over a period of from one to two academic years. The total time depends on past academic course work and experience background in the health care field. In no instance can the total program consist of less than 45 hours, including residency.

#### CURRICULUM

The following minimum curriculum is required of Master's candidates in all fields of Health Care Administration.

	Semester Hours
B Ad 208: Personnel Management and Industrial Relations.....	3
B&PA 201: Advanced Administrative Management.....	3



	Semester Hours
* B&PA 204: Quantitative Factors in Administration.....	3
† B&PA 207: Human Factors in Administration.....	3
HCA 202: Introduction to Health Care Administration.....	3
HCA 203: Organization and Management.....	3
HCA 205: Hospital Management Procedures.....	3
HCA 206: Case Studies in Health Care Administration.....	3
HCA 207: Management Analysis in Health Care Institutions.....	3
HCA 209: Health Care Economics.....	3
HCA 212: Planning and Constructing Health Care Facilities.....	3
‡ HCA 293—	
94-95: Residency I .....	9
§ Elective: To be selected with the approval of the adviser.....	18
Total.....	60

#### ADMINISTRATION OF LONG-TERM CARE FACILITIES

Master's candidates electing a concentration in the Administration of Long-term Care Facilities such as chronic disease hospitals, nursing homes, facilities for the aged, extended care facilities, and mental hospitals, have the same admission requirements as students in the hospital administration field. They must follow the curriculum outlined above for the first phase of the degree program, including in the electives 12 semester hours selected from the following courses:

	Semester Hours
HCA 250: Administration for Mental Care.....	3
HCA 260: Administration for Long-term Care Facilities.....	3
HCA 261: Business Procedures for Long-term Care Facilities.....	3
HCA 265-66: Readings in Long-term Care Administration.....	6
HCA 267: Social Gerontology for the Administrator.....	3

The second phase of the program consists of a calendar year of residency in one or more facilities for long-term care, for which the student receives 9 semester hours of credit. During the residency year the candidate must write a major report.

#### HEALTH RECORDS ADMINISTRATION

The Health Records Administration program offers an area of concentration which, when added to other material acquired, provides special assistance to those who wish to manage an automatic data processing activity for an entire health care institution or system. It is designed to prepare those who wish to supervise data collection, processing, and retrieval activities for health care complexes.

\* May be waived in selected cases.

† When appropriate, hospital administration students may take Psychology 245, *Seminar: Organizational Behavior*, and/or omit B&PA 207 if content is included in other course requirements.

‡ The student must register for 3 semester hours of residency at the end of the first phase and before leaving the University for the residency hospital. Registration for 1968 will be held May 24, 1968.

§ Up to 15 semester hours may be waived in selected cases.



Prerequisite: a Bachelor's degree from an accredited college or university is required with acceptable work from an approved institution which qualified the student for national certification as medical records librarian; and 3 semester hours of statistics and 6 of accounting.

For students who have already qualified as medical records librarians, the maximum health records program consists of 60 hours of course work, including 9 hours of residency. Business and Public Administration 218, 219, 220, 221, and Health Care Administration 285 must be included in the electives.

For students who have not qualified for national certification as medical records librarians, a special program of three phases can be set up. Students electing this concentration may terminate their study with the completion of the first phase, at which time a certificate is awarded and qualification attained for national certification as medical records librarian, or they may complete the requirements for the Master's degree. The background for this preparatory program requires 6 semester hours in human anatomy and physiology, 3 hours in statistics, and 6 hours in accounting. A broad liberal arts background is preferred, including courses in such fields as anatomy, biology, business administration, history, logic, physiology, and sociology. This would entitle the student to admission to a two-phase program covering two or more academic years. The first phase, which qualifies the student for certification, consists of:

	Semester Hours
B Ad 208: Personnel Management and Industrial Relations.....	3
B&PA 219: Digital Computer Programming Concepts.....	3
B&PA 220: Comparative Digital Computer Systems and Their Management .....	3
B&PA 221: Management Information Systems Development and Application .....	3
HCA 203: Organization and Management.....	3
HCA 205: Hospital Management Procedures.....	3
HCA 221-22: Medical Science and Medical Terminology.....	6
HCA 223-24: Introduction to Health Records Administration.....	6
HCA 225-26: Health Records Administration.....	6
HCA 229: Health Records Administration Internship.....	3

To meet the requirements for the Master's degree the student must continue with (1) the second phase which consists of an additional 24 semester hours of prescribed course work and (2) the third phase which consists of a period of residency equivalent to 6 semester hours.

## INTERNATIONAL BUSINESS

The Master's program in International Business is designed to prepare students for careers in firms operating on a multinational basis or about to enter the international field; for careers in the Federal Government and in international agencies concerned with business, industry, and finance abroad; and for the Commerce option of the Foreign Service Officer Examination.

This program is also designed to prepare foreign students with the background and skills necessary to promote international business, for careers in foreign and domestic firms within their own countries and for commercial officer positions within their governments.



Each student's program is individually developed by the student's adviser according to the student's background and interests, and includes the *required* courses in administration, see page 123.

#### PERSONNEL ADMINISTRATION

The program of Personnel Administration is described on page 130 and may lead to the degree of Master of Arts in Government, Master of Business Administration, or Master of Public Administration.

#### MASTER OF PUBLIC ADMINISTRATION

Curricula leading to the professional degree of Master of Public Administration are available in the fields of Health Care Administration, Personnel Administration, Public Administration, and Urban and Regional Planning.

#### PUBLIC ADMINISTRATION

This program provides a course of study appropriate for those students currently in government or with appreciable past experience in government, or those with other than an undergraduate social science degree. The degree of Master of Public Administration is a professional degree, preparing graduates for positions of higher responsibility in the public service and generally improving their competence in public employment. Work done for this degree may lead directly toward the degree of Doctor of Public Administration.

The degree is awarded by vote of the Faculty upon satisfactory passing of the Master's Comprehensive Examination, and the submission of an acceptable thesis. The academic program ranges from 30 to 60 semester hours, depending upon the background and experience of each individual student. Six semester hours in the program represents major research and preparation of a thesis. Students who have undergraduate backgrounds in political science, history, economics, business administration, sociology, or psychology, or who have had appropriate career experience closely related to such fields, ordinarily require fewer hours of course work to qualify for the degree and to prepare themselves for the Master's Comprehensive Examination. The student develops a program in consultation with his adviser.

No more than 6 hours of graduate credit can be transferred from other institutions, and any transfer of credit must be approved by the Dean.

The course work for the degree of Master of Public Administration must include the *required* courses in administration, page 123. Other courses selected with the approval of the adviser, should be concerned with selected fields of administration in government and related social and economic studies. The thesis, which may be a major case study, is prepared under the guidance of an appointed adviser.

Fields of study include administrative theory and practice, administration in the Federal Government, comparative and developmental administration, public personnel management, public financial management and budgeting, human factors in administration, government-business relations, metropolitan administration and urban affairs, and data processing and systems management. Fields of study may also be selected from closely related social sciences.



### HEALTH CARE ADMINISTRATION

The programs in Health Care Administration are described on pages 124-27, and lead to the degree of Master of Business Administration or Master of Public Administration.

### PERSONNEL ADMINISTRATION

The program in Personnel Administration is described on page 130, and may lead to the degree of Master of Business Administration, Master of Public Administration, or Master of Arts in Government.

### URBAN AND REGIONAL PLANNING

The program in Urban and Regional Planning leads to the degrees of Master of Public Administration and Master of Arts in Government. It is designed to provide a broad professional education, develop competence in planning theory and methodology, and emphasize analytical and creative imagination necessary for solving urban and regional problems. The basic professional program and the fields of specialization which it makes possible form an excellent background for many government careers on the national, state, county, and municipal levels; and for private professional planning practice. With the assistance of an adviser, each program is individually planned, in accordance with the interest and goal of the student.

Prerequisite: undergraduate courses in drawing, economics, political science, and statistics. The applicant's aptitude for his chosen area of specialization and previous practical planning experience are significant considerations in his acceptance for graduate study in Urban and Regional Planning.

The program consists of (1) 45 semester hours—39 hours of course work and 6 hours of thesis; (2) a minimum of three months full-time professional training in a planning agency under qualified supervision, with an acceptable written report to be submitted after completion of the training period; and (3) the passing of a Master's Comprehensive Examination.

Students with degrees from accredited schools of law or architecture can often complete the program in 30 semester hours, including the required practical training and a thesis.

### MASTER OF ARTS IN GOVERNMENT

Curricula leading to the degree of Master of Arts in Government are available in the fields of Business and Economic Statistics, Personnel Administration, Public Administration, and Urban and Regional Planning.

The programs leading to this degree require a minimum of 30 semester hours of work, including 24 hours of course work and a thesis equivalent to 6 semester hours. Most individual student programs exceed 30 hours, dependent upon the undergraduate major and other prerequisites.

Second-group courses (numbered 101-200) may be counted toward the Master's degree up to a maximum of 12 hours, but only when registration for advanced credit has been approved at the beginning of the course by the curriculum adviser. No work counted toward a Bachelor's degree may also be counted toward a Master's degree.



**BUSINESS AND ECONOMIC STATISTICS**

Prerequisite: an undergraduate major in Business and Economic Statistics, or the equivalent; such work must include a minimum of 24 semester hours of second-group courses in statistics and a minimum of 10 semester hours in second-group courses in accounting, business administration, and economics.

This program requires at least 12 semester hours of graduate courses in statistics. The remaining courses are to be selected from graduate offerings in accounting, business administration, economics, public administration, and statistics with the approval of the adviser. A thesis equivalent to 6 semester hours is required.

**PERSONNEL ADMINISTRATION**

The program in personnel administration leads to the degree of Master of Arts in Government, to the degree of Master of Public Administration (if elective emphasis is directed toward Public Administration), or to the degree of Master of Business Administration (if elective emphasis is directed toward Business Administration).

The course work must include the *required* courses in administration, page 123, and the thesis (Business Administration 299–300 or Public Administration 299–300). Each individual student program is arranged in consultation with a curriculum adviser.

**PUBLIC ADMINISTRATION**

The program, in contrast to the professional program leading to the degree of Master of Public Administration (see page 128) is designed for students who wish to emphasize the academic elements of Public Administration. It may also serve as a basis for later study toward the doctoral degree. It is a suitable degree objective for students who have just completed the Bachelor's degree.

Each candidate is expected to prepare himself for a Master's Comprehensive Examination on administration and policy formulation in government and on one additional field to be selected from the following: public personnel management and human relations, public financial management and budgeting, systems management and data processing, comparative and developmental administration, government-business relations, and metropolitan administration and urban affairs. Related studies may be selected from business administration, business and public administration, accounting, economics, geography, history, political science, psychology, and sociology.

The course work is planned with an adviser.

**URBAN AND REGIONAL PLANNING**

The program in Urban and Regional Planning leads to the degrees of Master of Arts in Government and Master of Public Administration. It is designed to provide a broad professional education, develop competence in planning theory and methodology, and emphasize analytical and creative imagination necessary for solving urban and regional problems. The basic professional program and the fields of specialization which it makes possible form an excellent background



for many government careers on the national, state, county, and municipal levels; and for private professional planning practice. With the assistance of an adviser, each program is individually planned, in accordance with the interest and goal of the student.

Prerequisite: undergraduate courses in drawing, economics, political science, and statistics. The applicant's aptitude for his chosen area of specialization and previous practical planning experience are significant considerations in his acceptance for graduate study in Urban and Regional Planning.

### **Graduate Certificate in Health Care Administration**

STUDENTS WITH APPROVED MASTER'S DEGREES from accredited institutions may take a special post-Master's program leading to a Graduate Certificate in Health Care Administration. Each program will be planned to meet the professional needs of the individual student whether he wishes to undertake a new field of study or amplify his knowledge of work done at the Master's level.

This program permits study in depth in such areas as health care administration consulting, regional planning, governmental administration, and long-term health care administration, including mental hospitals, nursing homes and care of the aged.

Prerequisite: a Master's degree from an accredited college or university and an academic average which indicates the ability to undertake advanced study. The applicant is also judged on his experience, character, and personality. Students lacking formal study in health care administration will be required to take qualifying courses.

#### **REQUIREMENTS FOR THE CERTIFICATE**

Students with adequate preparation in the health care field can complete the requirements with a minimum of 18 semester hours of approved graduate study. Those lacking such specialized study or equivalent experience will usually need to complete approximately 30 hours. At the discretion of the student's advisory committee a maximum of 6 semester hours may be transferred from another accredited institution if the work was taken for credit toward a graduate degree.

#### **PROGRAM OF STUDIES**

Health Care Administration 270 *Research in Health Care Administration* is required of all candidates for the Certificate. The remaining courses consist of a program of study worked out in consultation with a faculty adviser and planned with consideration of the student's educational and experience background and his specific professional objectives.

### **Doctoral Study**

WORK FOR THE DEGREES of Doctor of Business Administration and Doctor of Public Administration is under the supervision of the Committee on Doctoral Studies.



Completed application forms must be sent to the Office of Admissions. The applicant should ask three individuals, who are acquainted with his ability to do high-level academic work, to write directly to the Chairman of the Committee on Doctoral Studies. Applicants for the degree of Doctor of Business Administration must file results of the Admission Test for Graduate Study in Business with the Office of Admissions before final approval of their applications can be given. Applicants for the degree of Doctor of Public Administration must submit results of either the Admission Test for Graduate Study in Business or the Graduate Record Examination to the Office of Admissions. Arrangements to take these tests must be made with the Educational Testing Service, 20 Nassau Street, Princeton, N. J. 08540; or 1947 Center Street, Berkeley, Calif. 94704.

An applicant must have the degree of Master of Business Administration or Master of Public Administration, as appropriate; or a Master of Arts degree in an approved field; or the equivalent, together with acceptable personal qualities and a capacity for creative scholarship. Each applicant must demonstrate his competence by qualifying examinations.

The Committee on Doctoral Studies, in consultation with the applicant, will (1) designate fields of study selected from such areas as Business Administration, Economics, Health Care Administration, International Business, Public Administration, and Political Science, and (2) appoint an adviser to guide the student in his work in these fields. Most students will complete, prior to the general examination, a minimum of 30 semester hours in graduate courses and such additional course work as may be prescribed by the adviser; but each program is individually arranged in light of the student's background.

All work for the Doctor's degree must be completed in five years unless an extension of time is granted by the Committee on Doctoral Studies prior to the expiration of the time limit.

Students not registered for doctoral study under the payment plan in effect prior to July 1, 1967, are required to register for a minimum hour-load (see pages 22-23).

When the applicant has satisfied his adviser and the Committee of his readiness to take the General Examination in the fields of study previously designated, the examination will be scheduled during the following January or May.

Upon successful completion of the General Examination and approval of the subject of the doctoral dissertation, the student may be admitted to candidacy by the Committee on Doctoral Studies. Work on the dissertation is equivalent to a minimum of 24 semester hours. The candidate's research and the preparation of his dissertation are supervised by a Research Adviser designated by the Committee.

#### THE DISSERTATION

A dissertation is required as evidence of ability to perform scholarly research and to interpret and present its results.

No later than the date specified in the calendar the candidate must submit to the Dean three complete copies of the dissertation and two original copies of an abstract (not to exceed 600 words) of his dissertation. One copy of the abstract is for inclusion in the Abstracts of Doctoral Dissertations issue of the University Bulletin; the other is sent to University Microfilms, Inc., for inclusion in their monthly publication "Dissertation Abstracts" which is distributed nationally.



One copy of the dissertation is also sent to University Microfilms, Inc., where the master negative microfilm is retained. A positive microfilm copy is sent by University Microfilms, Inc., to the Library of Congress for its file.

Printed copies of detailed regulations regarding the form and reproduction of the dissertation, preparation of the abstract, and services offered by University Microfilms, Inc., are available in the Office of the Dean. The successful candidate for the doctorate is required, before receiving his degree, to pay a fee to cover the expense of printing the abstract of his dissertation, and for the basic service rendered by University Microfilms, Inc. Accepted dissertations, with accompanying drawings, become the property of the University and are deposited in the University Library, where the duplicate copies are bound and made available for circulation. Permission to publish or adapt material in them must be secured from the Dean.

#### THE FINAL EXAMINATION

The Final Examination of the candidate consists of his oral defense of the dissertation. The examination will be given by a committee appointed by the Committee on Doctoral Studies. Upon successful completion of this oral examination the candidate will be approved for the degree of Doctor of Business Administration or Doctor of Public Administration by the Committee on Doctoral Studies.

#### RESIDENCE

The Committee on Doctoral Studies expects all students to remain registered (see minimum hour-load requirements, pages 22-23) until *all* degree requirements are satisfied, although there is no formal regulation concerning the minimum amount of time of study either in preparation for the General Examination or as a doctoral candidate engaged in research. The student who undertakes either part of the doctoral program on full or limited schedule must maintain "continuous registration" under the School of Government and Business Administration even when he is granted a leave of absence for study or residence elsewhere. By failing to register for one semester or more, the student breaks his registration and must apply for readmission to the School under whatever new conditions and regulations are set up by the Committee or the member of the Faculty who directs his research. The student who has completed his tuition requirements, but whose graduation is deferred for any reason, must maintain continuous registration by paying the continuous registration fee for the semester immediately preceding the graduation at which he expects to receive his degree.

### Special Programs

#### GOVERNMENT MANAGEMENT INTERN SCHOLARSHIP PROGRAM

THE GOVERNMENT MANAGEMENT INTERN SCHOLARSHIP PROGRAM offers annually fifty scholarships to assist federal agencies in training carefully selected young



men and women for administrative leadership in government career service. Each scholarship provides a tuition-free course of 3 hours a semester and appropriate academic credit (up to 6 semester hours) for the successful completion of training assignments required in any agency whose training program has been approved for this purpose by the University.

#### NAVY GRADUATE FINANCIAL MANAGEMENT PROGRAM

The Navy Graduate Financial Management Program, sponsored by the Naval Postgraduate School, provides 50 semester hours of work in financial management and related fields for a selected group of Naval and Marine officers. The Master of Business Administration degree is awarded upon successful completion of this full-year program.

#### AIR FORCE ADVANCED MANAGEMENT PROGRAM

The Air Force Advanced Management Program, sponsored by the United States Air Force Institute of Technology, provides 50 semester hours of work in advanced management and supporting fields for a selected group of Air Force officers. Most of the officers receive the Master of Business Administration degree upon successful completion of this full-year program.

#### GRADUATE PROGRAMS AT SENIOR SERVICE COLLEGES

The School of Government and Business Administration cooperates with the College of General Studies in the Off-Campus programs of that College, particularly in the fields of accounting, business administration, financial management, governmental administration, and personnel administration. A special program leading to the degree of Master of Science in Business Administration has been established by the College of General Studies in cooperation with the School of Government and Business Administration for students and faculty of the Air War College and the Command and Staff College, Air University, Maxwell Air Force Base, Ala., and the Industrial College of the Armed Forces, Fort McNair, Washington, D. C.

#### COOPERATIVE PROGRAM IN URBAN AFFAIRS WITH VIRGINIA POLYTECHNIC INSTITUTE

A Washington Program in Urban Studies was instituted in the fall semester of 1964 in cooperation with the faculty of Urban and Regional Planning of the College of Architecture of Virginia Polytechnic Institute. Under this program a faculty member and a group of students from VPI live and study at The George Washington University during the fall semester each year. The program consists of lectures and seminars in addition to studio problems, studies in housing, urban design, intergovernmental relations, and urban renewal. Courses offered under this program are available to students majoring in metropolitan administration and urban affairs and in urban and regional planning. Students desiring to participate in this program should consult with their advisers or the Chairman of the Department of Public Administration.



## CONTINUING EDUCATION IN HEALTH CARE ADMINISTRATION

A nondegree program is conducted in the various areas of health care administration both on-campus and off-campus whenever a sufficiently large class is organized. Institutes, workshops, and lecture series are conducted under the auspices of program faculty and selected leaders from local, state, and regional areas on topics of current interest to the requesting organization. No specific prerequisite is required. Fees are to be announced.

## SPECIAL COURSES IN HEALTH CARE ADMINISTRATION

Special courses are offered which are concerned with health care associations, planning agencies, consulting firms, and insurance firms.

## THE INTERNATIONAL INSTITUTE FOR HEALTH CARE ADMINISTRATION

In recognition of special educational needs of students from other countries, The International Institute for Health Care Administration offers programs of instruction designed to meet these requirements either at degree or certificate level.

It is also equipped to enter into arrangements with principals of hospital systems in world-wide areas to assist in the preparation of teaching programs, or the actual instruction of administrative personnel either abroad or at the University.

## THE MANAGEMENT RESEARCH GROUP

The Management Research Group seeks to serve government and industry and commerce by contributing to the development and understanding of basic theory in the field of management. The Group also provides assistance in translating theory into practice.

Relationships and techniques important to modern information flow and managerial decision making are stressed. The research conducted extends to system design, analysis of system performance, and the evaluation of practice in relation to managerial criteria.

## OFF-CAMPUS DEGREE PROGRAMS

The School of Government and Business Administration has academic jurisdiction over off-campus programs leading to the following degrees: Bachelor of Business Administration, Bachelor of Science in General Studies, Master of Science in Business Administration, Master of Science in Financial Management, Master of Science in Governmental Administration, Master of Science in Personnel Administration, Master of Science in Public Administration.

The administration of these degree programs is handled by the College of General Studies. For details concerning the off-campus programs, see the Catalogue of the College of General Studies.



## SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS

Acting Dean H.M. Stout

### FACULTY—ACADEMIC YEAR 1966-67

*Professors* Joseph Aschheim, J.L.B. Atkinson, J.W. Brewer, A.E. Burns, R.H. Davison, C.E. Galbreath, Bernard Gordon (*Visiting Research*), Andrew Gyorgy, W.C. Hopkins, Tso-Liang Hsiao (*Visiting Research*), W.H. Kraus, H.L. LeBlanc, Kurt London, H.M. Merriman, F.H. Michael, J.N. Mosél, Benjamin Nimer, R.E. Purcell, C.T. Stewart, Jr., H.M. Stout, R.B. Thompson, D.S. Watson, R.K. White, Helen Yakobson

*Associate Professors* Dennis Doolin (*Visiting*), P.F. Gallagher, P.P. Hill, H.C. Hinton, Ching-Yao Hsieh, R.S. Jordan, Vladimir Petrov, Sidney Ploss (*Research*), H.M. Sachar, George Stambuk

*Assistant Professors* Don Allensworth, C.F. Elliott, J.K. McDonald, J.A. Morgan, Jr., W.M. Overgaard, Bernard Reich

### COMMITTEES\*

#### DEAN'S COUNCIL

Don Allensworth, C.F. Elliott, Andrew Gyorgy, P.P. Hill, H.C. Hinton, H.L. LeBlanc, J.A. Morgan, Jr., Bernard Reich

#### COMMITTEE ON PROGRAMS AND CURRICULUM

C.E. Galbreath (*Chairman*), W.H. Kraus, H.L. LeBlanc, H.M. Merriman, J.K. McDonald

#### ADVISORY COUNCIL ON THE INSTITUTE FOR SINO-SOVIET STUDIES

H.M. Stout (*Chairman*), Joseph Aschheim, W.H. Kraus, Kurt London, F.H. Michael, Benjamin Nimer, R.B. Thompson, Helen Yakobson

#### COMMITTEE ON ADMISSIONS AND ADVANCED STANDING

J.W. Brewer, P.P. Hill, H.C. Hinton, J.A. Morgan, Jr., Bernard Reich

\* The Dean of the School is an ex officio member of all committees.



## INTRODUCTION

The study of Government was first organized as a separate entity in the University in 1898 with the establishment of the School of Comparative Jurisprudence and Diplomacy. In 1928, this School was reorganized and broadened as the School of Government. During the next two decades, programs in business administration and public administration were added, and the emphasis gradually shifted from undergraduate to graduate study. The name was changed in 1960 to the School of Government, Business, and International Affairs to reflect more accurately the offerings of the School. A division of the School was effected in 1966, and two schools were established—the School of Government and Business Administration, a primarily professionally-oriented school; and the School of Public and International Affairs, a primarily policy-oriented school.

Programs of the School of Public and International Affairs are interdisciplinary, and emphasize governmental policy, both domestic and foreign.

Students in the freshman and sophomore years are registered in the lower division of Columbian College of Arts and Sciences, the liberal arts college of the University. Here they are assigned special advisers from this School to assist them in planning their programs.

## ACADEMIC PROGRAMS

Programs in the fields of International Affairs, Public Affairs, and Sino-Soviet Affairs are available within the School of Public and International Affairs.

## OBJECTIVES

Each of the two undergraduate programs of study is aimed at preparing the student to understand major contemporary issues in international affairs or in domestic public affairs. The programs are designed not to produce narrow professional specialists, but to foster a liberal education, interdisciplinary in nature and broader than a concentration in one of the conventional disciplines. In each program there is a double effort: to develop a background as broad and as deep as possible in order to assist in the understanding and analysis of modern problems, and to give instruction in some useful tools of analysis.

The graduate programs leading to the degree of Master of Arts are more concentrated. The student is expected to develop a greater competence in an area or a discipline, building on his undergraduate program in preparation for professional employment in government, in international organizations, in business, or in private agencies concerned with public or international affairs.

## REGULATIONS

*Regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES are stated on pages 15–26; other University regulations, on pages 33–36.*



### ATTENDANCE

A student may not attend classes until registration is completed and fees due are paid. A student may be dropped from any course for undue absence.

The student is held responsible for all the work of the courses in which he is registered, and all absences must be excused by the instructor in charge before provision is made for him to make up the work missed.

A student suspended for any cause may not attend classes during the period of suspension.

## Bachelor of Arts

THE SCHOOL OFFERS PROGRAMS leading to the degree of Bachelor of Arts in the fields of International Affairs and Public Affairs.

### ENTRANCE REQUIREMENTS

The satisfactory completion of the *International Affairs* or *Public Affairs* curriculum in the lower division of Columbian College of Arts and Sciences (see page 68), or the equivalent.

### THE REQUIREMENTS FOR THE DEGREE

#### ACADEMIC WORK LOAD

A full-time student not on probation may not ordinarily take more than 15 semester hours. A student employed more than 24 hours a week, who is not on probation, may not take more than 9 semester hours.

A full-time student whose quality-point index is 3.50 or higher may take not more than 18 semester hours. A student employed more than 24 hours a week, whose index is 3.50 or higher, may take up to 12 semester hours.

A student who accepts employment after registration or at any time during a semester must report immediately to the Dean, so that his program may be adjusted if necessary.

Exception to these rules will require the approval of the Dean.

#### SCHOLARSHIP

In order to graduate, a student must have the following: (1) a general quality-point index of at least 2.00 and (2) an index in his major of at least 2.50. The major includes the required courses and courses taken in the group options.

#### DEAN'S HONOR LIST

The names of students who achieve a quality-point index of 3.50 or higher are placed on the Dean's Honor List for that semester. Appearance on the List will be limited to (1) full-time students registered for a minimum of 12 semester hours and (2) part-time students registered for a minimum of 12 semester



hours over a period of two consecutive semesters, which may include a summer term.

#### PROBATION

A student whose quality-point index falls below 2.00 after completing a minimum of 12 semester hours of study, will be placed on probation. This probation extends over the period in which the student attempts 12 semester hours of work which may include remedial studies as prescribed.

#### SUSPENSION

A student whose quality-point index is 1.50 or below or whose index remains below 2.00 at the end of his probationary period may be suspended. A student suspended for poor scholarship may apply for readmission after an interval of one calendar year. To be considered for readmission, he must pass prescribed tests and submit evidence to the Dean's Council that during his absence from the University he has so conducted himself as to indicate that he will profit by readmission. A student readmitted after suspension is on probation and must maintain a current quality-point index of at least 2.50 on each 12 semester hours of work undertaken until his cumulative index is 2.00. In no case will the probationary period after readmission exceed 24 hours of study. A student suspended twice for poor scholarship will not be readmitted.

#### RESIDENCE

*A minimum of 30 semester hours, including at least 12 hours in the major field, must be completed while registered in the School of Public and International Affairs.* This requirement applies to students transferring within the University as well as to students transferring from other institutions. Summer work may be counted toward the residence requirement, but in no case may the period of residence aggregate less than thirty weeks. Unless special permission is granted by the Dean to pursue work elsewhere, the work of the senior or final year must be completed in the School of Public and International Affairs.

#### USE OF CORRECT ENGLISH

Any student whose written or spoken English in any course is unsatisfactory may be reported by the instructor to the Dean. The Dean may assign supplementary work, without academic credit, varying in amount with the needs of the student. If the work prescribed is equivalent to a course, the regular tuition fee is charged. The granting of a degree may be delayed for failure to make up any such deficiency in English to the satisfaction of the Dean.

#### STUDY ABROAD

Students wishing to study abroad must consult with their advisers and the Dean, because arrangements must be made on an individual basis. Students of international affairs are encouraged to travel and study abroad.



### CORRESPONDENCE AND HOME-STUDY COURSES

Credit for correspondence or home-study courses is not acceptable and cannot be applied toward a degree.

### CURRICULUM REQUIREMENTS

To be recommended by the Faculty for graduation, candidates are required to complete, in addition to the appropriate freshman and sophomore work, a minimum of 60 semester hours during the junior and senior years, as set forth in one of the following curricula.

#### EXAMINATIONS FOR WAIVING CURRICULUM REQUIREMENTS

A required course may be waived by the satisfactory passing of a waiver examination authorized and prescribed by the department or curriculum adviser concerned. Passing this examination does not entitle the student to any hours of credit toward the degree. Request to take the examination should be made to the curriculum adviser and the required fee paid at the Office of the Cashier before the date set for the examination.

### INTERNATIONAL AFFAIRS

The International Affairs program covers international political relations, international economics, international communications, and regional studies. Its purposes are to provide an understanding of the forces operative in the contemporary world—political, economic, and social—and to give the student an awareness of major international problems and the role of the United States as a world power.

All International Affairs majors must complete 30 semester hours of required courses (see page 328), 15 hours to be selected in consultation with the adviser from one of the following group options, and 15 hours of electives.

*Group I: International Politics.*—Courses concerned with theory and practice in international affairs, forces shaping the world scene, and American foreign policy.

*Group II: International Economics.*—Courses concerned with the world economy and American policy and practice in international trade and finance.

*Group III: International Communications.*—Courses concerned with the study of international information programs, public opinion, psychological warfare, cultural relations, and public relations.

*Group IV: Area or Regional Studies.*—Integrated programs of study on Europe, Africa, the Middle East, the Far East, the Soviet Orbit, and Latin America.

### PUBLIC AFFAIRS

The Public Affairs program is a composite curriculum dealing with domestic government and policy.

All Public Affairs majors must complete 33 semester hours of required courses (see page 328), 12 hours in a group option, either economics or politics (see page 328), and 15 hours of electives.



## Master of Arts

THIS SCHOOL OFFERS PROGRAMS leading to the degree of Master of Arts in the fields of International Affairs and Public Affairs.

### ENTRANCE REQUIREMENTS

A Bachelor's degree from an accredited college or university, with a quality-point index of 3.00 (a *B* average) in the relevant undergraduate field, is required.

*In the field of International Affairs.*—The applicant's undergraduate program should include background courses corresponding to an undergraduate major in international affairs at this University.

*In the field of Public Affairs.*—An undergraduate major in public affairs, economics, history, or political science, depending on the field of specialization.

### GENERAL REQUIREMENTS

A 3.00 average in the undergraduate major is normally required for admission to graduate study. Deficiency in undergraduate preparation may be satisfied by (1) taking specified undergraduate courses and maintaining a 3.00 average in such courses or (2) passing a comprehensive examination in the major field. The examination may be taken only with the Dean's approval upon recommendation of the curriculum adviser.

The programs leading to the degree of Master of Arts require a minimum of 30 semester hours of work, including 24 hours of course work and a thesis equivalent to 6 semester hours. Most individual student programs exceed 30 hours, dependent upon the undergraduate major and other prerequisites.

Master's degrees are awarded by vote of the Faculty on completion of the required course work, an acceptable thesis or the equivalent, and the passing of the Master's Comprehensive Examination. An applicant whose background does not include the necessary courses or equivalent work experience must take a program longer than the minimum hours required.

Second-group courses (numbered 101–200) may be counted toward the Master's degree, only when registration for advanced credit has been approved at the beginning of the course by the curriculum adviser. No work counted toward a Bachelor's degree may also be counted toward a Master's degree.

All work for a Master's degree must be completed in five years, unless an extension of time is granted by the Dean.

No credit is granted for work done *in absentia* or without formal instruction, except for the thesis, which may be completed *in absentia* with the permission of the curriculum adviser and the Dean.

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A student who expects to continue his studies for the degree of Doctor of Philosophy in the field of International Relations after receiving the Master's de-



gree in the field of International Affairs is strongly advised to plan his program from the beginning so that work for the lower degree will fit into a subsequent doctoral program in the Graduate School of Arts and Sciences (see pages 76-77, 79-80).

#### FOREIGN LANGUAGE REQUIREMENTS

A candidate for the degree of Master of Arts must show that he has a reading knowledge (certified by the appropriate language department) of at least one modern foreign language, to be approved by the Dean. The language examination should be taken before the student begins the second 15 hours of his work. No student may take the examination more than three times.

#### MASTER'S COMPREHENSIVE EXAMINATION

In addition to any course examinations the candidate must pass a written Master's Comprehensive Examination. Examinations are scheduled two times a year (usually in December and April), and should be taken during the last semester of course registration or shortly after the completion of the prescribed course work. If there is a lapse of time between completion of course work and the examination, the student must maintain "continuous registration" during this period. The candidate must consult with his adviser, well in advance, as to the date of his examination and the definition of the subject-matter fields which this examination is to cover. An oral examination on his thesis or major report may also be required.

#### SCHOLARSHIP

Grades for graduate work are *A*, outstanding; *B*, high quality; *C*, minimum quality; *F*, failure; and *I*, incomplete. *CR* indicates credit.

An average of *B* or better is required for the Master's degree. The grade of *C* is not considered as failing but must be counter-balanced by a grade of *A* in a graduate course of equal status.

A Master's candidate who receives a grade of *F* is required to present cause for consideration by the Dean's Council as to why he should be allowed to continue his studies.

Whenever a grade has not been assigned, the symbol *I* (incomplete) or the symbol *W* (authorized withdrawal) will be recorded. The symbol *I* indicates that a satisfactory explanation has been given to the instructor for the student's failure to complete the required work of the course. An "incomplete" cannot be made up after the lapse of one calendar year except by written permission of the Dean's Council. An incomplete which is not removed within one calendar year is automatically changed to an *F*. An incomplete cannot be removed by reregistering for the course.

#### THE THESIS

The thesis subject should be selected as early as possible so as to permit effective integration with the course work.



The subject must be approved by the student's adviser and recorded in the Office of the Dean by the date announced in the calendar. The thesis in its final form must have the approval of the professor in charge and must be presented to the Dean by the student no later than the date announced in the calendar. Printed copies of detailed regulations regarding the form and reproduction of the thesis are available in the Office of the Dean.

Payment of tuition for the thesis entitles the candidate, during the period of registration, to the advice and direction of the member of the Faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional calendar year may be granted without further tuition payment. The student must, however, maintain continuous registration (see page 36) during this period. If the preparation of the thesis extends beyond the additional calendar year, the student must register for the entire 6 hours of thesis again and pay tuition as for a repeated course.

#### INTERNATIONAL AFFAIRS

Prerequisite: the applicant's undergraduate program should include background courses corresponding to an undergraduate major in International Affairs at this University. (See page 328.)

Any omission in the applicant's former program must be made up by appropriate courses in addition to the requirements for the Master's degree. The language requirement, see above, must be satisfied.

The Master's program in International Affairs is a flexible one, ranging from 30 to 60 hours, depending upon the background of the student. The student's particular responsibilities will be indicated in his letter of admission to the program and in the course of subsequent consultation with a program adviser, who will be assigned and with whom the student is required to confer.

A minimum of 24 hours of third-group courses, numbered above 200 and a thesis (6 semester hours), must be included in the program. Under special circumstances, relevant undergraduate courses, numbered from 101 to 200 may be taken for graduate credit and included in the 24 hours. In each case, graduate credit will be allowed only if approval has been given by the program adviser at the time of registration for the course, and by the course instructor. The student who takes an undergraduate course for graduate credit is expected, by arrangement with the instructor, to do work at the graduate level in addition to the regular work of the course.

In addition to the satisfactory completion of his courses and the thesis, the student must pass a set of written examinations over three fields within the broad area of international affairs. The student will confer with his program adviser concerning the complete range of general and regional fields from which his three fields may be selected. Two general fields and one regional field constitute a frequently-followed pattern. However, variation from this pattern is permitted, with the consent of the program adviser.

Graduate courses should be selected, in consultation with the adviser, with a view to their relevance to the fields in which the student expects to be examined. Course work should be understood to be only partial preparation for the field examinations, and the student is expected to pursue a program of additional reading in each of his three fields, in accordance with the advice of the instructor responsible for instruction in the field.



*General Studies.*—The program in International Affairs offers the following general fields of study: Comparative Government and Politics, Comparative Political Development, International Communications, International Communism, International Economics (including Theory and Development), International Law, International Organization, International Politics, Modern Political Theory, and Socialist and Communist Theory. Graduate courses (numbered over 200) in anthropology, economics, history, political science, psychology, and sociology relate to these fields of specialization.

*Regional Studies.*—The regional fields include specializations in the modern history, government and politics, and the economic history and problems of Western Europe, Eastern Europe, Soviet Union, Latin America, Middle East, Sub-Saharan Africa, South Asia, Southeast Asia, Far East, and Communist China. U. S. Diplomatic History and American Foreign Policy are also offered as regional specialties. Graduate courses (numbered over 200) in anthropology, economics, history, and political science relate to these regional fields.

*Sino-Soviet Studies.*—The Institute for Sino-Soviet Studies provides a program of interdisciplinary study centered on the problems of the Sino-Soviet areas and the International Communist Movement. Graduate studies under the auspices of the Institute are available to qualified students. Courses and seminars are designed to analyze the principles and problems of International Communism and to study the policies, strategies, and tactics of the major communist powers. (See pages 260-65.)

#### PUBLIC AFFAIRS

Prerequisite: an undergraduate major in public affairs, economics, history, or political science, depending upon the field of specialization. Any course deficiency in the undergraduate Public Affairs Curriculum, as stated on page 328, must be made up.

The language requirement, see above, must be satisfied.

The program in Public Affairs is offered in two fields of specialization: domestic economics and domestic politics.

Recommended for domestic economics: courses in economic development, economic policy, public finance, and national income.

Recommended for domestic politics: courses in U. S. social, constitutional, and political history; comparative government; political theory; legislative organization; jurisprudence; political parties; and public opinion.

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The degree of Doctor of Philosophy in the field of International Relations is offered in the Graduate School of Arts and Sciences of the University. The doctoral program in this field includes work in economics, history, and political science. Students working towards the degree of Doctor of Philosophy in the fields of political science, history, and economics can arrange concentrations in various aspects of international affairs. Requirements for the degree of Doctor of Philosophy are stated on pages 76-77, 79-80.



## **Institute for Sino-Soviet Studies**

### **GRADUATE STUDY AND RESEARCH IN COMMUNIST AFFAIRS**

THE INSTITUTE FOR SINO-SOVIET STUDIES provides a program of specialized graduate study and research within the School of Public and International Affairs. Courses of the Institute are drawn from a variety of academic areas and thus provide an interdisciplinary approach to the study of the Soviet Union, Eastern Europe, the Far Eastern Communist states, and the world Communist movement. Faculty members conduct seminars and reading courses in the disciplines of economics, geography, history, law, political science, and psychology.

The Institute provides Master's and Doctoral candidates with the opportunity to combine a course program of Sino-Soviet Studies with the work in their own disciplines. It also offers a 30-semester hour program of graduate study leading to a Certificate for specialized study on the Soviet Union, China, or both, see pages 146-47.

Students who are preparing for the degree of Master of Arts in the field of International Affairs in the School of Public and International Affairs, or for the degree of Master of Arts in the field of economics, history, or political science in the Graduate School of Arts and Sciences, with a specialization in Sino-Soviet Studies, may take one-half of their course work from the Institute's program.

Students working toward the degree of Doctor of Philosophy in International Relations with special emphasis on the Sino-Soviet Area are expected to combine work in the Institute with work in the fields of economics, history, and political science. Doctoral candidates in the field of political science may combine work in the Institute with work in an appropriate number of fields within political science. All work leading to the degree of Doctor of Philosophy is under the general supervision of the Graduate School of Arts and Sciences and Consultative Committees designated by it which direct the work of each graduate student upon admission to degree candidacy. Doctoral candidates in political science and other disciplines may assume that their committees in consultation with them will arrange for an appropriate combination of fields concerned with Sino-Soviet Studies with work in other phases of their disciplines. A candidate for such a degree should assume that his committee will require the substitution of a reading examination in Chinese or Russian for one of the two Western languages normally required for the degree.

### **RESEARCH**

Research work is integrated with the teaching program. Members of the research program belong to different disciplines and include not only faculty but also selected graduate students. Research monographs are being published by the Institute.

A special brochure describing in more detail the work of the Institute is available upon request.



## INTERUNIVERSITY RESEARCH COLLOQUIA

Scholars from The George Washington University, American University, Howard University, and the University of Maryland conduct two interuniversity research colloquia. The Colloquium on Modern China is under the chairmanship of Professor Franz Michael, Associate Director of the Institute for Sino-Soviet Studies; the Colloquium on Russia and Eastern Europe is under the chairmanship of Professor Kurt London, Director of the Institute for Sino-Soviet Studies. Research in progress undertaken by members of the colloquia and plans for future research are discussed at weekly meetings. Advanced graduate students can be admitted on approval of the chairman concerned. They receive 3 semester hours of academic credit for each semester of participation.

## CERTIFICATE OF THE INSTITUTE FOR SINO-SOVIET STUDIES

The Institute for Sino-Soviet Studies offers a Certificate in Sino-Soviet Studies for students who wish evidence of the completion of specialized studies on the Soviet Union, Eastern Europe, and/or China. Candidates for advanced degrees and qualified nondegree students may apply for the Certificate upon the completion of the requirements set forth below.

## ENTRANCE REQUIREMENTS

A Bachelor's degree from an accredited college or university, with a quality-point index of 3.00 (a *B* average) is required.

The applicant's undergraduate program should include background courses corresponding to an undergraduate major in International Affairs at this University, with emphasis on the Soviet Union and China (see page 328). Any deficiencies in the applicant's study of the Soviet Union and China must be satisfied by appropriate undergraduate courses, as specified by his adviser in addition to the requirements for the Certificate.

## REQUIREMENTS FOR THE CERTIFICATE

The program consists of 30 semester hours of graduate study and the passing of a reading examination in Russian or Chinese, or both. Each program is planned in consultation with the Director of the Institute or one of his associates. Since the Institute places emphasis upon the interdisciplinary approach to study and research, the student can expect his program to include work in economics, geography, history, law, literature and culture, political systems, political theory, and psychology.

Although the student's background and prior study determine to a considerable extent his program in the Institute, intensive research in either country should run concurrently with seminars listed in the annual program of the Institute.

## RESIDENCE

All of the work for the Certificate must be taken in residence in the School of Public and International Affairs, as a candidate for the Certificate; and all of



the work must be completed in a maximum of three years, unless an extension of time is granted by the Dean.

### War College Programs

THE SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS cooperates with the College of General Studies Off-Campus programs at the National, Naval, and Air War Colleges leading to the degree of Master of Science in International Affairs. Admission is limited to selected members of the faculty and student bodies of the War Colleges.

The programs of study are complementary to the portions of the War College curricula pertaining to international relations, national strategy, and foreign policy.





## THE DIVISION OF UNIVERSITY STUDENTS\*

Dean J.G. Allee, Jr.

Assistant Dean G.A. Olkhovsky

### THE DEAN'S COUNCIL†

J.G. Boswell, I.B. Hansen, Hewitt Kenyon

### INTRODUCTION

THE DIVISION OF UNIVERSITY STUDENTS was established in 1930 to make the regular course offerings of the University more generally available to members of this metropolitan community and others, not at the time candidates for degrees in this University. In this Division are registered students who wish to undertake university courses for credit or as auditors. University students may be employed in government or industry, taking courses to increase their vocational fitness or to inform them on new developments in the arts and sciences. They may be taking courses as a matter of personal interest for cultural enrichment. Such students may be candidates for higher degrees in other institutions, sent here for special work as part of a graduate program. They may be undergraduates, matriculated in other colleges, taking summer sessions courses only or courses for transfer during the regular academic year with the approval of their own institution. To serve members of such groups and others, not enrolled in degree-granting branches of the University, is the function of the Division of University Students.

The privilege of attending The George Washington University as a nondegree student is granted on the basis of maturity and proper preparation. Because no degree at The George Washington University is involved, there can be no meaningful advisory system in the Division. However, students are invited to seek advice from academic departments. University Students are urged to apply to the Office of Admissions for transfer to degree-granting branches whenever such action is appropriate.

All courses except those restricted to medical and law students and those limited to specific degree candidates are open to students in the Division of University Students. Students wishing to take Engineering and Applied Science courses, see the School of Engineering and Applied Science Catalogue.

\* The listing of Administrative Officers is for 1966-67.

† The Vice President for Academic Affairs, the Dean and the Assistant Dean of the Division are ex officio members of the Council.



Registration in a given course may be denied students in this Division when space is needed for degree candidates.

An applicant who has been denied admission to any degree-granting branch of the University will not be considered for admission to the Division of University Students for the semester for which the applicant was denied.

### ENTRANCE REQUIREMENTS\*

Good character and an academic background appropriate for the program of studies contemplated are required.

A person not working for a degree at this University will be considered for admission to the Division of University Students to take courses for which he has adequate preparation, as determined by the departments concerned.

### SCHOLASTIC RECORDS

#### Scholastic records are required of

1. An applicant who graduated from high school within the previous two calendar years. Such an applicant must meet the following requirements for admission to Columbian College of Arts and Sciences.
  - a) An acceptable certificate of graduation from an accredited secondary school, showing at least fifteen units† which must include four years of English; at least two years of one foreign language; two years of science, preferably with laboratory instruction; two years of social studies, one of which must be American history; and two years of college preparatory mathematics. It is to be noted that one unit of algebra, or the equivalent, is prerequisite to courses in chemistry and statistics, and that one unit in algebra and one unit in plane geometry, or the equivalent, are prerequisite to courses in mathematics and physics.
  - b) The principal's statement that the applicant is prepared to undertake college work.
  - c) College Entrance Examination Board scores must be submitted on the Scholastic Aptitude Test, the English Composition Achievement Test, and two additional achievement tests in subjects reflecting the student's major interests.
2. An applicant who has been subject to any form of academic or disciplinary action at any college or university within the previous calendar year.

#### Scholastic records may be required of

1. An applicant who has attended any college or university during the previous calendar year.
2. A former student of this University who was on probation or suspended and, since then, has attended another college or university.
3. An applicant who has ever been subject to academic or disciplinary action.

\* Foreign students, see pages 16-17.

† A unit represents a year's study in a secondary school subject, including in the aggregate not less than 120 sixty-minute periods, or the equivalent, of prepared classroom work.



When scholastic records are required, a student may be admitted for one semester or summer term only, pending receipt of records and under provisions stated by the Office of Admissions.

## REGULATIONS

*Regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES are stated on pages 15-26; other University regulations, on pages 33-36.*

## ACADEMIC WORK LOAD

A full-time student who is not on probation may take ordinarily not more than 17 semester hours. A student employed more than 20 hours a week, who is not on probation, may take not more than 10 hours.

A full-time student whose quality-point index is 3.50 or higher may take not more than 19 hours. An employed student who meets the same standard may take not more than 12 hours.

A student who accepts employment after registration or at any time during a semester must report that fact immediately to the Dean so that his program may be adjusted, if necessary.

## SCHOLARSHIP

A student who fails to maintain the scholarship requirements of this Division may be dismissed from the University.

## GRADES

*Undergraduate.*—See pages 33-34.

*Graduate.*—For graduate work, grades are indicated as *A*, excellent; *B*, satisfactory; *C*, low pass; *F*, unsatisfactory; *I*, incomplete; *CR* indicates credit.

## PROBATION AND SUSPENSION

A student taking only first- and second-group courses must maintain a quality-point index of 2.00 or be placed on probation. He remains on probation as long as his index is below 2.00. If his index falls below 1.50, he is subject to suspension.

A student who is taking or has taken any third or higher group course must maintain a quality-point index of 3.00, or be placed on probation. He remains on probation as long as his index is below 3.00. If his index falls below 2.25, he is subject to suspension.

## CHANGES IN PROGRAM OF STUDIES

*Changes within the Division of University Students.*—A student may not change or drop courses (see "Withdrawal," page 35) or change his status to that of auditor except with the approval of the Dean.



Change from one section to another of the same course may be made with the approval of the Dean and the department concerned.

*Transfer within the University.*—Transfer to or from the Division of University Students may be made only with the approval of the deans concerned.

Application for transfer to degree candidacy will be considered only after the completion of at least one semester in the Division of University Students.

The student currently or previously registered in this Division who wishes transfer to degree candidacy should understand that consideration will be given to only those courses which are approved as applicable toward the degree sought and that a maximum of 45 semester hours of such credits earned in this Division can be applied toward a Bachelor's degree. Upon transfer the student should consult the dean concerned and understand clearly the requirements he must fulfill.

Normally, all work toward a Master's degree must be done in residence in the degree-granting college or school. Work done in the Division of University Students will not be counted toward a graduate degree unless prior written approval, obtained from the relevant degree-granting college or school, has been filed in the Office of the Dean of the Division of University Students.





## THE SUMMER SESSIONS

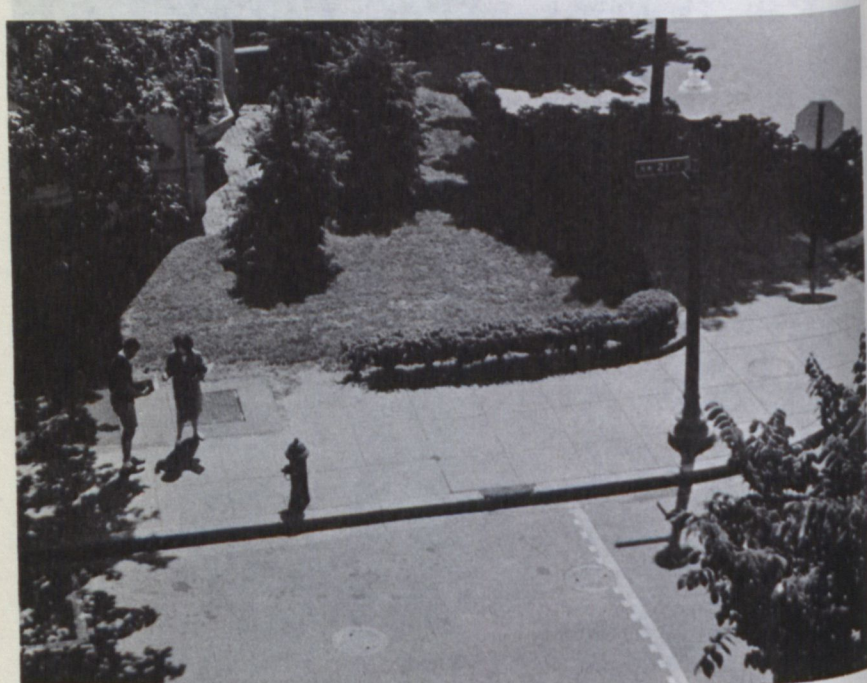
Dean C.W. Cole

Assistant Dean R.L. Williams

DURING THE SUMMER OF 1967, Columbian College of Arts and Sciences, the Graduate School of Arts and Sciences, the School of Government and Business Administration, the School of Public and International Affairs, and the Division of University Students offer courses in two 5-week sessions, with some graduate seminars and courses extending over an 8-week period; the National Law Center offers courses in two 6-week sessions and one 13-week session; the School of Education offers courses in a 6-week session and three 3-week workshop sessions; the School of Engineering and Applied Science offers courses in one eight-week session.

In addition, a carefully planned group of special programs will be offered on campus to serve a variety of student needs. Three special programs will be offered overseas in conjunction with the Experiment in International Living: an art program in Scandinavia and language programs in France and in Spain.

For a complete statement concerning summer-term work, see the Summer Sessions catalogue.





## SPONSORED RESEARCH

*Administrator of the Office of Sponsored Research N.M. Head*

THE RESEARCH PROGRAMS listed in this section are special programs which are set up for the specific purpose of attacking in an academic atmosphere problems submitted by the sponsoring agency. Cooperation between these programs and the various departments of instruction is as close as the nature and needs of the programs and departments will permit.

### BIOLOGICAL SCIENCES COMMUNICATION PROJECT

The primary aim of the project is to study and facilitate the flow of information from the producer of life science information to the ultimate consumer. Studies associated with the nature and control of the literature in the life sciences are undertaken as well as investigations of the communication practices of the individuals involved. Associated with this primary aim are educational, service, and consultative activities.

The major portion of work accomplished by this project is Agency supported. Completed research is reported in *Communique*.

Charles W. Shilling M.D., *Director*  
Leslie A. Kulp, Ph.D., *Senior Research Scientist*  
Donald E. Wright, A.M., *Senior Research Scientist*  
Mildred C. Benton, A.B., *Senior Staff Scientist*  
John P. Dickson, A.B., *Senior Staff Scientist*  
Quentin L. Hartwig, Ph.D., *Senior Staff Scientist*  
Charles E. King, Ph.D., *Senior Staff Scientist*  
Marion Parks, A.B., *Senior Staff Scientist*  
Helen S. Chiaruttini, A.M., *Research Scientist*

### BIOMETRIC LABORATORY

The Biometric Laboratory applies mathematical techniques to biological problems related to mental health. It was established under a contract with the National Institutes of Health. The laboratory assists investigators throughout the United States in planning research and in analyzing data. The majority of these research projects concern the effects of drugs on behavior.

Roland R. Bonato, Ph.D., *Director; Assistant Research Professor of Psychology*  
William Guy, A.M., *Senior Staff Scientist*  
Nils B. Mattson, LL.M., *Senior Staff Scientist*  
James J. McKeon, Ph.D., *Senior Staff Scientist*  
Robert F. Prien, Ph.D., *Senior Staff Scientist*  
Kenneth Chi-Kun Yang, A.B., *Senior Scientist*



Clarence I. Butte, *Research Scientist*  
Frances H. Fleming, M.N., *Research Scientist*  
Naoma F. Hartwick, A.B., *Research Scientist*  
Elizabeth M. Hunt, M.S., *Research Scientist*  
Robert Lazer, A.B., *Research Scientist*  
Ruth Robinson, *Research Scientist*  
Arden Smith, B.S., *Research Scientist*

#### COMMISSION ON UNDERGRADUATE EDUCATION IN THE BIOLOGICAL SCIENCES

The Commission on Undergraduate Education in the Biological Sciences is one of eight similar groups that have been established with the support of the National Science Foundation to serve as planning and coordinating groups for the improvement of college and university education in the sciences and mathematics. The Commission is designed to study the problems of undergraduate education in biology, and to provide advice, stimulation, help, and encouragement to individual faculty members, institutions, and professional societies engaged in the improvement of biology instruction. While the Executive Office of the Commission functions under the auspices of The George Washington University, biologists involved in the Commission's activities are drawn from colleges, universities, and agencies throughout the country. The Chairman of the Commission is Earl D. Hanson, Ph.D., of Wesleyan University.

Martin W. Schein, D.Sc., *Director, Executive Office, Commission on Undergraduate Education in the Biological Sciences; Visiting Professor of Biology*  
David G. Barry, Ph.D., *Associate Director; Visiting Professor of Biology*  
Thomas G. Overmire, Ph.D., *Senior Staff Scientist; Visiting Professor of Biology*  
Ira W. Deep, Ph.D., *Senior Research Scientist; Visiting Associate Professor of Biology*  
Jeffrey J.W. Baker, M.S., *Staff Biologist; Visiting Associate Professor of Biology*  
Norma Jean Enochs, Ph.D., *Staff Biologist; Visiting Assistant Professor of Biology*  
David F. Carroll, M.S., *Research Scientist*

#### COMPUTER PROGRAMS RESEARCH PROJECT

The purpose of the Computer Programs Research Project is to develop general purpose computer programs for the Division of Research Grants of the National Institutes of Health. The current activities of the project include analysis of data gathering and data processing activities, examination of numerous specific problems for common elements that can be resolved by a single generalized computer program, and developing and testing these programs on the Honeywell 800 computer. In the near future, research efforts will be oriented toward producing limited information retrieval systems.

Richard S. Enburg, Ph.D., *Director*  
Peter M. Burtram, *Research Scientist*  
William C. Ferguson, Jr., *Research Scientist*  
Robert McCormick, *Research Scientist*



### EDUCATION RESEARCH PROJECT

The Education Research Project is engaged in basic and applied research in all aspects of education. Working with the School of Education, it provides for faculty and graduate students an opportunity for more direct and active participation in the continuous evaluation and renewal of the American education systems and processes. The work of this project is carried out under contracts and grants from the U. S. Office of Education and other private and governmental agencies.

John T. Dailey, Ph.D., *Director; Research Professor of Education*  
 Clinton A. Neyman, Jr., A.M., *Assistant Director; Assistant Research Professor of Education*  
 Richard Myrick, Ph.D., *Senior Staff Scientist*  
 Dean L. DesRoches, A.M. in Ed., *Senior Scientist*  
 James M. Snyder, A.M., *Senior Scientist; Assistant Research Professor of Education*

### HUMAN RESOURCES RESEARCH OFFICE

The Human Resources Research Office (HumRRO) was originally established in 1951 to carry out an integrated program of human resources research for the Department of the Army. HumRRO research may now be performed for other departments of the Federal Government, as well as with state and local governments and with organizations which support training and educational research. HumRRO's mission involves development of the technology of training and education, research and development on specific problems in training and education, research on leadership and management and training for these, studies of techniques for motivating training and performance, studies of human performance in military and educational systems, and the teaching of the technology of training and education.

#### OFFICE OF THE DIRECTOR

Meredith P. Crawford, Ph.D., *Director*  
 William A. McClelland, Ph.D., *Associate Director*  
 Eugene A. Cogan, Ph.D., *Assistant Director for Reporting*  
 Carl J. Lange, Ph.D., *Assistant Director for Planning*  
 Charles W. Smith, LL.B., *Business Administrator*  
 Robert G. Smith, Jr., Ph.D., *Assistant Director for Operations*  
 Saul Lavisky, A.M., *Research Information Coordinator*  
 Lola M. Zook, A.B., *Editorial Adviser and Publications Manager*

#### DIVISION NO. 1 (SYSTEM OPERATIONS), ALEXANDRIA, VIRGINIA

J. Daniel Lyons, Ph.D., *Director of Research*  
 A. James McKnight, Ph.D., *Senior Staff Scientist*  
 Edgar L. Shriver, Ph.D., *Senior Staff Scientist*  
 C. Dennis Fink, Ph.D., *Senior Scientist*  
 Felix Kopstein, Ph.D., *Senior Scientist*



Robert J. Seidel, Ph.D., *Senior Scientist*  
Richard D. Behringer, Ph.D., *Research Scientist*  
Patrick J. Butler, A.M., *Research Scientist*  
Harold G. Hunter, Ph.D., *Research Scientist*  
Herbert B. Leedy, Ph.D., *Research Scientist*  
Harold Wagner, A.B., *Research Scientist*

DIVISION NO. 2 (ARMOR), FORT KNOX, KENTUCKY

Norman Willard, Jr., Ph.D., *Director of Research*  
Robert A. Baker, Ph.D., *Senior Staff Scientist*  
Donald F. Haggard, Jr., Ph.D., *Senior Staff Scientist*  
L. Dennis Cannon, Ph.D., *Senior Scientist*  
David L. Easley, Ph.D., *Senior Scientist*  
Elmo E. Miller, Ph.D., *Senior Scientist*  
Shepherd Schwartz, A.B., *Senior Scientist*  
Richard M. Schulman, Ph.D., *Research Scientist*  
Richard W. Sheldon, Ph.D., *Research Scientist*

DIVISION NO. 3 (RECRUIT TRAINING), PRESIDIO OF MONTEREY, CALIFORNIA

Howard H. McFann, Ph.D., *Director of Research*  
S. James Goffard, Ph.D., *Senior Staff Scientist*  
John E. Taylor, Ph.D., *Senior Staff Scientist*  
Robert Vineberg, Ph.D., *Senior Staff Scientist*  
John S. Caylor, Ph.D., *Senior Scientist*  
Richard P. Kern, Ph.D., *Senior Scientist*  
Robert D. McDonald, Ph.D., *Senior Scientist*  
Ernest K. Montague, Ph.D., *Senior Scientist*  
Morris Showel, Ph.D., *Senior Scientist*  
Joseph S. Ward, Ph.D., *Senior Scientist*  
Harry A. Burdick, Ph.D., *Research Scientist*  
Wayne L. Fox, Ph.D., *Research Scientist*  
Douglas L. Grimsley, Ph.D., *Research Scientist*

DIVISION NO. 4 (INFANTRY), FORT BENNING, GEORGIA

T.O. Jacobs, Ph.D., *Director of Research*  
Joseph A. Olmstead, Jr., Ph.D., *Senior Staff Scientist*  
Clay E. George, Ph.D., *Senior Scientist*  
Arthur J. DeLuca, A.M., *Research Scientist*  
Douglas S. Holmes, Ph.D., *Research Scientist*  
Theodore R. Powers, A.M., *Research Scientist*

DIVISION NO. 5 (AIR DEFENSE), FORT BLISS, TEXAS

Robert D. Baldwin, Ph.D., *Director of Research*  
Joseph F. Follettie, Ph.D., *Senior Staff Scientist*  
Harry L. Ammerman, Ph.D., *Senior Scientist*



Albert L. Kubala, Ph.D., *Senior Scientist*  
 William H. Melching, Ph.D., *Senior Scientist*  
 James P. Rogers, Ph.D., *Senior Scientist*  
 Paul G. Whitmore, Ph.D., *Senior Scientist*  
 Richard E. Wienke, Ph.D., *Senior Scientist*  
 A. Dean Wright, M.S., *Senior Scientist*  
 Harold E. Christensen, M.S., *Research Scientist*  
 E. Wayne Frederickson, A.M., *Research Scientist*  
 Julia S. Harris, B.S.C., *Research Scientist*  
 Gilbert L. Neal, Ph.D., *Research Scientist*

#### DIVISION NO. 6 (AVIATION), FORT RUCKER, ALABAMA

Wallace W. Prophet, Ph.D., *Director of Research*  
 Francis H. Thomas, Ph.D., *Senior Staff Scientist*  
 Paul W. Caro, Jr., Ph.D., *Senior Scientist*  
 Wiley R. Boyles, Ph.D., *Research Scientist*  
 Russel E. Schulz, A.M., *Research Scientist*

#### DIVISION NO. 7 (LANGUAGE AND AREA TRAINING), ALEXANDRIA, VIRGINIA

Arthur J. Hoehn, Ph.D., *Director of Research*  
 Alfred J. Kraemer, Ph.D., *Senior Staff Scientist*  
 Richard Beym, Ph.D., *Senior Scientist*  
 George H. Brown, Ph.D., *Senior Scientist*  
 Alfred I. Fiks, Ph.D., *Senior Scientist*  
 Dean K. Froehlich, Ph.D., *Senior Scientist*  
 Edgar M. Haverland, Ph.D., *Senior Scientist*  
 John W. McCrary, Jr., Ph.D., *Senior Scientist*  
 Arthur H. Niehoff, Ph.D., *Senior Scientist*  
 Jose Armilla, Ph.D., *Research Scientist*  
 Jack Danielian, Ph.D., *Research Scientist*  
 Robert J. Foster, Ph.D., *Research Scientist*  
 Samuel G. Taxis, A.M., *Research Scientist*  
 Harley M. Upchurch, Ph.D., *Research Scientist*

#### LOGISTICS RESEARCH PROJECT

The purpose of the Logistics Research Project is to study logistics problems in all their aspects, to develop more efficient and expeditious methods of solving logistics problems and to apply advanced data processing techniques to the solution of these problems. A large scale data processing facility is based upon an IBM 7080 computer. This project is operated under contracts with the Department of the Navy.

W.H. Marlow, Ph.D., *Principal Investigator; Professorial Lecturer in Mathematics*  
 Joseph P. Fennell, A.M., *Deputy Principal Investigator*  
 Henry Solomon, Ph.D., *Deputy Principal Investigator; Professorial Lecturer in Economics*



Herbert Solomon, Ph.D., *Visiting Senior Staff Scientist*  
 William E. Caves, *Senior Staff Scientist*  
 Byron Cosby, Jr., Ph.D., *Senior Staff Scientist*  
 Theodore E. Folk, *Senior Staff Scientist*  
 Sheldon E. Haber, Ph.D., *Senior Staff Scientist; Associate Professorial Lecturer in Economics*

Erling F. Rosholdt, M.E.A., *Senior Staff Scientist*  
 Frank W. Segel, M.B.A., *Senior Staff Scientist*  
 Irwin S. Tolins, Ph.D., *Senior Staff Scientist*  
 Ross E. Tomlinson, A.M., *Senior Staff Scientist*  
 William L. Wilkinson, M.S., *Senior Staff Scientist*  
 James E. Hamilton, M.S., *Senior Scientist*

Peter J. Kalman, Ph.D., *Senior Scientist; Associate Professorial Lecturer in Mathematics*

Raymond W. Lewis, A.B., *Senior Scientist*  
 Arthur J. Nevins, Ph.D., *Senior Scientist*  
 Donald D. Boyer, A.M., *Research Scientist*  
 Joseph M. D'Amalio, B.S., *Research Scientist*  
 Steven A. Frank, M.B.A., *Research Scientist*  
 Dale M. Heien, A.M., *Research Scientist*

George M. Lady, A.M., *Research Scientist; Assistant Professorial Lecturer in Economics*

Samuel J. Mathis, Jr., B.S. in E.E., *Research Scientist*  
 George W. Saxton, B.S., *Research Scientist*  
 S. Scott Sutton, A.M., *Research Scientist*  
 Che S. Tsao, Ph.D., *Research Scientist*  
 David A. Walker, M.S., *Research Scientist*

#### MATERNAL AND INFANT HEALTH COMPUTER PROJECT

A computer tabulation and statistical evaluation model to relate biostatistical data with census tract data. This project is operated under a grant from the Children's Bureau, U. S. Office of Education.

Roland R. Bonato, Ph.D., *Director; Assistant Research Professor of Psychology*  
 Margaret Pratt, A.B., *Assistant Director*  
 Gerald L. Giesecke, B.S., *Senior Scientist*

#### NAVAL ORDNANCE SYSTEMS COMMAND PROJECT

Investigations program on explosive ordnance disposal render-safe and demolition procedures.

Ralph O. Phillips, M.S., *Principal Investigator*

#### NUTRITION STUDY IN IRAN

Retardation in growth and other development has been observed to be widespread in Iran, and there is some evidence that this may be related to zinc deficiency. Investigations are being organized to study (1) nutrition factors which may be responsible for this retardation and (2) possible genetic factors.



Studies to identify specific end results, in conjunction with a research laboratory, are conducted at the Veterans Administration Hospital. This project operates under a contract from the National Institutes of Health.

James A. Halsted, M.D., *Director; Clinical Professor of International Health*

#### **SOCIAL RESEARCH GROUP**

The Social Research Group conducts surveys and experiments with concentration on basic research underlying an approach to the solution of social problems.

Ira H. Cisin, Ph.D., *Director; Professor of Sociology*

Hugh J. Parry, Ph.D., *Associate Director; Visiting Professor of Sociology*

Vito M. Signorile, A.M., *Associate Staff Scientist*

Don Cahalan, A.M., *Senior Staff Scientist*

Ben L. Owens, *Senior Staff Scientist*

Elaine F. Hayden, Ph.D., *Senior Scientist*

Regis H. Walther, Ph.D., *Project Director, Department of Labor Project*

Shirley D. McCune, D.S.W., *Project Director, Campfire Girls Project; Assistant Professorial Lecturer in Education*

#### **STATE AND LOCAL FINANCE PROJECT**

Work started during the academic year 1965-66 on a three-year study of advance fiscal budgeting in the states and communities, as a facet of economic development programs. In cooperation with the Council of State Governments, the U. S. Conference of Mayors, and other organizations of governments, research is planned on methods of long-range tax projects and also on long-range fiscal programs in states.

Selma J. Mushkin, Ph.D., *Director*

Harry P. Hatry, M.S., *Deputy Director*

John F. Cotton, B.S., *Senior Staff Scientist*

Gabrielle C. Lupo, A.B., *Senior Staff Scientist*

Robert T. Richards, A.M., *Senior Staff Scientist*

#### **TEST OF BASIC INFORMATION (PROJECT TOBI)**

Project TOBI is revising the Test of Basic Information for use with 4- to 6-year-old children who have a limited experiential background. The test will provide information on how much a child has learned from his environment. This project operates under a contract from the Office of Economic Opportunity.

Margaret H. Moss, A.M., *Director; Assistant Professor of Special Education*

#### **VOCATIONAL EDUCATION PROJECT**

Development of a scheme for analyzing, comparing, and designing vocational education curricula. This project operates under a grant from the U. S. Office of Education.

Howard H. McFann, Ph.D., *Director*



## THE GENERAL ALUMNI ASSOCIATION

THE OBJECTIVES OF THIS ASSOCIATION are to unite the graduates who wish to associate themselves for charitable, educational, literary, and scientific purposes, and to promote the general welfare of the University.

Eligible members are those who have matriculated in any school of the University and who have left the University in good standing, or any person who is or has been a member of the teaching, research, or administrative staff of the University, or of the Board of Trustees of the University. Active members are those eligible members who are current contributors (dues or otherwise) to or life members of The George Washington University General Alumni Association, the Alumni Association of any school of the University, or contributors to the Annual Support Program.

The Alumni Office is in Bacon Hall, 2000 H Street, N.W., Washington, D. C. 20006.

All alumni are urged to keep the Alumni Office informed of changes of address or occupation and to supply information with regard to their fellow alumni.





## COURSES OF INSTRUCTION

ON THE FOLLOWING PAGES OF THIS CATALOGUE, under the alphabetically arranged names of the departments of instruction and special interdepartmental programs, are listed the courses of instruction offered by the University in the summer of 1967 and in the academic year 1967-68. The courses as here listed are subject to change. The University reserves the right to withdraw any course announced.

### HOURS OF INSTRUCTION

Classes are scheduled in the morning, afternoon, and evening. Evening and day-time sections of the same course are identical, are taught by the same staff of instructors, and carry the same amount of credit. By taking the evening and summer classes and extending the time of study beyond the usual four years, a part-time student may complete the requirements and obtain a degree.

### EXPLANATION OF COURSE NUMBERS

*First-group courses.*—Courses numbered from 1 to 100 are planned for students in the freshman and sophomore years. With the approval of the adviser and the Dean, they may also be taken by juniors and seniors. In certain instances, they may be taken by graduate students to make up undergraduate deficiencies or as prerequisite to advanced courses, but they may not be credited toward a higher degree.

*Second-group courses.*—Courses numbered from 101 to 200 are planned for students in the junior and senior years. They may be credited toward higher degrees only when registration for graduate credit has been approved at the beginning of the course by the dean responsible for the graduate work and by the instructor and when the completion of additional work has been certified by the instructor.

*Third-group courses.*—Courses numbered from 201 to 300 (in the Graduate School of Arts and Sciences, the School of Government and Business Administration, and the School of Public and International Affairs); courses numbered 201 to 400 (in the School of Education) are planned primarily for graduate students. They are open, with the approval of the instructor, to qualified seniors; they are not open to other undergraduates.



*Fourth-group courses.*—Courses numbered 301 to 400 in the Graduate School of Arts and Sciences are limited to graduate students; but they are primarily for doctoral candidates. In the School of Education fourth-group courses, numbered 401 to 500, are limited to graduate students with Master's degrees from accredited institutions.

### SEMESTER HOURS OF CREDIT

The number of semester hours of credit given for the satisfactory completion of a course is, in most cases, indicated in parentheses after the name of the course. Thus, a year course giving 3 hours of credit each semester is marked (3-3), and a semester course giving 3 hours of credit is marked (3). A semester hour usually consists of the completion of one fifty-minute period of class work or of one laboratory period a week for one semester.

### Accounting\*

*Professors* E.J.B. Lewis (*Chairman*), J.W. Coughlan

*Professorial Lecturers* J.L. Buckler, Frank Higginbotham, C.L. Simpson, M.P. Pujol

*Associate Professor* F.C. Kurtz

*Associate Professorial Lecturers* O.C. Disler, E.E. Pontius, Jr., R.B. Brown

*Assistant Professors* M.G. Gallagher, Chei-Min Paik, M.R. Skigen, J.L. Thompson, Jr.

*Assistant Professorial Lecturers* O.B. Martinson, Jr., R.W. Perkins

*Lecturer* Mahavir Jain

*Associate in Arts (two-year terminal curriculum in Accounting).*—See page 68.

*Bachelor of Business Administration with a major in Accounting.*—See pages 112-15.

*Master of Business Administration in the field of Accounting.*—See pages 121-24.

### FIRST GROUP

#### 1-2 Introductory Accounting (3-3)

Staff

Preparation, uses, and limitations of financial reports. *First half:* fundamentals of data accumulation and processing. *Second half:* introduction to managerial accounting—financial programming, cost determination, and analysis of financial statements. Accounting 1 is prerequisite to Accounting 2. (*First half and second half:* fall and spring—day and evening; summer 1967)

### SECOND GROUP

#### 101 Cost Accounting (3)

Staff

Theory and purposes of industrial cost accounting, systems of cost control and determination, analysis and interpretation of cost data. Prerequisite: Accounting 1-2. (Fall—day; spring—evening)

\* Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.



**111 Financial Statement Analysis (3)**

Skigen

Methods and techniques of preparing, analyzing, and interpreting financial statements for the guidance of operating executives, directors, stockholders, and creditors. Prerequisite: 6 semester hours of accounting or permission of instructor. (Spring—evening; summer 1967)

**\*115 Survey of Accounting (3)**

Gallagher, Coughlan, Skigen

Preparation, uses, and limitations of financial information in the management process. Not open for credit to accounting majors. (Fall and spring—evening; summer 1967)

**121-22 Intermediate Accounting (3-3)**

Kurtz, Lewis

*First half:* accounting for assets and liabilities. Prerequisite: Accounting 1-2 or permission of instructor. *Second half:* partnership, corporation, consignment, and installment-sales accounting. Prerequisite: Accounting 121 or permission of instructor. (*First half:* fall—day; spring—evening; summer 1967. *Second half:* fall—evening; spring—day.)

**132 Accounting Theory (3)**

Coughlan, Paik

Development of basic accounting principles and concepts, review of current thought as reflected in the pronouncements of leading professional and accounting research associations, major contributions to accounting literature. Prerequisite: 6 semester hours of accounting. (Spring—day; summer 1967)

**141 Governmental Accounting (3)**

Lewis, Pujol

Appropriation, encumbrance, and fund accounting for governmental and institutional entities. Prerequisite: Accounting 1-2 or permission of instructor. (Fall—evening)

**144 Federal Accounting (3)**

Lewis, Pujol

Accounting procedures in the Federal Government, with emphasis on agency-level accounts and accounting support for cost-based budgets. Prerequisite: Accounting 141 or permission of instructor. (Not offered 1967-68)

**161 Federal Income Taxation (3)**

Gallagher

Federal income tax concepts applicable to individuals and corporations, differences between tax accounting and financial accounting, social security taxes. Prerequisite: Accounting 1-2 or permission of instructor. (Fall—day; spring—evening)

**162 Federal Tax Practice (3)**

Gallagher

Tax planning and research: tax treatment of partnerships, estates, trusts, foreign income, and gifts; use of standard tax services; assessment, collection, and refund procedures. Prerequisite: Accounting 161 or permission of instructor. (Spring—day)

**171 Auditing (3)**

Kurtz

Duties and responsibilities of auditors: principles and procedures of making audits, techniques of verifying financial statement items, preparation of audit working papers and reports. Prerequisite: Accounting 121-22. (Fall—evening)

\* Special sections of this course offered in Air Force Advanced Management Program and Navy Graduate Financial Management Program.



**172 Auditing Practice (3)**

Kurtz

Standards of audit reporting and other current auditing topics, including application of statistical sampling techniques to auditing, auditing electronic systems, and management advisory services. Prerequisite: Accounting 171 or permission of instructor. (Spring—evening)

**181 Accounting Systems (3)**

Lewis, Brown

Theory and procedure of designing and installing systems for collecting, recording, analyzing, and presenting accounting and other business data. Prerequisite: Accounting 101, 121-22, and 171, or permission of instructor. (Not offered 1967-68)

**191 Advanced Accounting (3)**

Skigen

Consolidated statements, statement of affairs, realization and liquidation reports, and estate and trust accounting. Prerequisite: Accounting 121-22. (Fall—evening)

**193 Business Budgeting (3)**

Lewis, Perkins

Principles, techniques, and procedures involved in the development, installation, and operation of a system of budgetary control to aid in management of commercial and industrial organizations. Prerequisite: Accounting 1-2. (Fall—evening; spring—day; summer 1967)

**196 Management Decisions and Accounting (3)**

Coughlan

Analysis of information required in capital budgeting, inventory management, and other decisions; cash-flow and probability data; advanced cost accounting systems. Prerequisite: Accounting 101. (Not offered 1967-68)

**THIRD GROUP****215 Survey of Managerial Accounting (3)**

Gallagher, Skigen

Nature, preparation, analysis, and interpretation of accounting reports; cost accounting, business budgeting, and internal accounting controls and their use in the management process. Prerequisite: Accounting 1-2 or 115 or permission of instructor. (Fall and spring—evening)

**231 Contemporary Accounting Theory (3)**

Coughlan

Advanced accounting principles and concepts and recent theories concerned with the valuation and amortization of assets and determination of income. Prerequisite: 6 semester hours of accounting and permission of instructor. (Fall—evening)

**241 Accounting and Related Disciplines (3)**

Coughlan

Relationship between accounting and such related disciplines as economics, statistical theory, and operations research; emphasis on what the accountant has to offer to these allied fields and on new ideas and requirements these fields may offer or impose upon accounting. Prerequisite: 6 semester hours or accounting. (Not offered in 1967-68)

**245 Decision Systems and Accounting (3)**

Paik

Limited to students in the Navy Graduate Financial Management Program. Problems encountered in managing financial and related information systems in complex organizations; the relationships between accounting in its broadest sense and management control and decision systems. (Fall—as arranged)



- 246 Governmental Accounting and Budgeting Problems (3)** Lewis  
Current problems in federal financial planning, programming, budgeting, accounting, and auditing. Prerequisite: Accounting 144 or permission of instructor. (Spring—evening)
- 275 Internal Control and Auditing (3)** Coughlan, Kurtz  
Internal accounting controls and review and appraisal of accounting systems, procedures, and managerial policies with respect to their effectiveness and profitability. Prerequisite: Accounting 171 or permission of instructor. (Summer 1967)
- 276 Management Planning and Control (3)** Paik  
Theories and techniques of cost accounting and budgetary planning and control, with emphasis on: the relation of planning and control systems to corporate and departmental objectives, control of decentralized operations and discretionary costs, long-range planning and control. Prerequisite: Accounting 101 and Business Administration 102 or Business and Public Administration 201, or permission of instructor. (Not offered 1967-68)
- 292 Professional Accounting Review (3)** Lewis  
Review and coordination of principles and techniques developed in the accounting curriculum, in preparation for general practice in the field of accountancy and for professional accounting examinations. Prerequisite: Accounting 101, 141, 161, 171, and 191; or permission of instructor. (Spring—evening)
- 295 Seminar in Accounting (3)** Staff  
Selected accounting research topics and problems; individual oral and written reports. Admission by permission of instructor; may be repeated once for credit. (Fall—evening)
- 297 Accounting Reading and Research (3)** Staff  
May be repeated once for credit. (Fall and spring—as arranged)
- 299 Thesis Seminar (3)** Staff  
(Fall and spring—as arranged; summer 1967)
- 300 Thesis Research (3)** Staff  
(Fall and spring—as arranged; summer 1967)

## American Thought and Civilization

*Bachelor of Arts with a major in American Thought and Civilization (Field-of-Study).*—See page 230. An interdepartmental degree program administered by the Department of English under Columbian College of Arts and Sciences.

*Master of Arts in the field of American Literary and Cultural History.*—See page 231. An interdepartmental degree program administered by the Department of English under the Graduate School of Arts and Sciences.

*Doctor of Philosophy fields of study in American Thought and Culture: Material Culture of the United States (jointly directed by the University and members of the staff of the Museum of History and Technology, Smithsonian Institution); and Social Themes in Literature.*—This program combines work in Literature and History and is administered by the Department of English under the Graduate School of Arts and Sciences. See pages 77-78, 79-80 for requirements for the degree.



## SECOND GROUP

## 101 American Civilization (3)

Staff

Lecture (1¼ hours), discussion (1¼ hours). Contemporary themes in American culture presented against the background of the humanities and social sciences. Each lecture presented by an authority on a particular subject; readings and discussion sections provide continuity. Center of attention varies from semester to semester. Prerequisite: successful completion of 85 semester-hours credit. Open to undergraduate and graduate students, but available for graduate credit only with the approval of the department and college concerned. Not available for graduate credit in the Graduate School of Arts and Sciences. Recommended as an elective, but not to be taken as part of any major program without specific departmental approval. (Fall—late afternoon; spring—evening)

## \*120 The Urbanization of American Intellectual Life (3)

(Summer 1967)

## COURSES OFFERED IN AFFILIATION WITH THE SMITHSONIAN INSTITUTION

The Graduate School of Arts and Sciences is affiliated with the Smithsonian Institution's Program for Graduate Students in the History of American Civilization. The following courses are offered at the Museum of History and Technology, by members of its staff:

## THIRD GROUP

## 250 Orientation Course: Material Aspects of American Civilization (3)

Familiarization with the historical collections of the Smithsonian Institution and introduction to opportunities for research and publication based on historical objects. Required of all students in the doctoral program affiliated with the Smithsonian Institution; open to undergraduate students with permission of instructor. (Fall and spring—day)

## FOURTH GROUP

## 351-52 Readings in Selected Aspects of American Civilization (3-3)

Supervised study in selected subject fields included in the collections of the Museum of History and Technology. Prerequisite: American Thought and Civilization 250. (Academic year—day)

## 398 Advanced Reading and Research (arr.)

Limited to students preparing for the Doctor of Philosophy qualifying examination. May be repeated for credit. (Fall and spring—as arranged)

## 399 Dissertation Research (arr.)

For Doctor of Philosophy candidates preparing dissertations significantly related to the material aspects of American civilization. Students work under curatorial supervision in the reference collections at the Museum. Prerequisite: American Thought and Civilization 351-52. May be repeated for credit. (Fall and spring—as arranged)

\* Offered in Summer Special Program in American Studies.



## Anatomy\*

*Professors* I.R. Telford (*Chairman*), Paul Calabrisi, C.M. Goss (*Visiting*)

*Professorial Lecturers* T.D. Stewart, J.L. Angel

*Associate Professors* F.D. Allan, T.N. Johnson, J.B. Christensen

*Associate Professorial Lecturers* J.A. Di Paolo, Max Levitan

*Assistant Professors* H.E. Kaiser, Joan Blanchette

*Assistant Clinical Professor* R.N. Brown

*Assistant Professorial Lecturers* L.E. Church, T.S. Reese, R.G. Clark

*Master of Science in the field of Anatomy.*—Prerequisite: a Bachelor's degree from this University, or the equivalent, with a major in a biological science or Chemistry. The undergraduate program must include the following courses, or equivalent: Biological Sciences 1-2; Chemistry 11-12, 51-52; Physics 1-2. Biochemistry 221-22 is recommended as an elective.

Required: the general requirements, pages 77-79, including Anatomy 202, 203, 204, 205, 221-22, 295, 299-300, and graduate courses in biochemistry, physiology, or related fields selected with the approval of the Department. It is not always possible to arrange courses and research so that the student can be assured of completing all the required work in one academic year.

*Doctor of Philosophy fields of study in Anatomy: Electron Microscopy, Embryology, Gross Anatomy, Histology, Human Genetics, Neuroanatomy, and Physical Anthropology.*—See pages 77-78, 79-80 for requirements for the degree.

### 201 Anatomy (12)

Staff

For medical students and qualified graduate students. Correlated laboratory and lecture course on human anatomy. All of the anatomical disciplines are integrated: regional gross dissection, histology, neuroanatomy, and embryology. Laboratory fee for nonmedical students, \$56. (Fall—day)

### 202 Gross Anatomy (6)

Calabrisi and Staff

For graduate students. Regional dissections of adult cadaver supplemented with lectures and X-rays. Laboratory fee for nonmedical students, \$30. (Fall—day)

### 203 Human Embryology (1)

Allan

For graduate students. Lectures on the origin and development of the human body. Emphasis on the value of embryology in interpreting anatomical anomalies. (Fall—day)

### 204 Neuroanatomy (2)

Johnson and Staff

For graduate students. Lectures and laboratory on gross and microscopic anatomy of the central nervous system and special senses. Laboratory fee for nonmedical students, \$13. (Fall—day)

### 205 Microscopic Anatomy (3)

Telford and Staff

For graduate students. Lectures and laboratory on the microscopic structure of cells, tissues, and organs of the human body. Laboratory fee for nonmedical students, \$13. (Fall—day)

### 221-22 Seminar (1-1)

Telford and Staff

For graduate students. Research reports and discussions of special topics by the staff and graduate students. Medical students encouraged to attend. 1 hour a week—as arranged. (Academic year—day)

\* Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.



- 249 Introduction to Anatomical Research (1)** Telford and Staff  
For graduate students. Major research techniques as applied to biological materials in the various anatomical disciplines. (Fall—day)
- 252 Physical Anthropology (1)** Stewart, Angel  
Variations in man and factors affecting him. Human evolution and racial differences. Anatomy and culture of ancient man. (Spring—day)
- 254 Fetal Anatomy (2)** Allan  
Dissection of an early and a late human fetus. Comparison of fetal and adult structures. Limited to 20 students. Laboratory fee for nonmedical students, \$10. (Spring—day)
- 255 Basic Genetics (1)** Di Paolo  
Introductory lectures on basic concepts in genetics: Mendelian inheritance, linkage, gene interaction, chromosome mapping, mutation, dominant and recessive genes. (Spring—day)
- 256 Human Genetics (1)** Jacobson\*  
Lectures covering general principles of genetics, new cytogenetics technics, aneuploidy in man and its significance, biochemical aspects of heredity, and genetic counseling. (Spring—day)
- 262 Gross Anatomy of Upper and Lower Extremities (2)** Calabrisi  
Detailed dissection of the region, supplemented by X-ray anatomy; discussions and assigned reading. Limited to 12 students. Laboratory fee for nonmedical students, \$10. (Spring—day)
- 264 Gross Anatomy of Head and Neck (2)** Christensen  
Detailed dissection of the region, supplemented by X-ray anatomy; discussions and assigned reading. Limited to 12 students. Laboratory fee for nonmedical students, \$10. (Spring—day)
- 266 Gross Anatomy of Thorax and Abdomen (2)** Christensen  
Detailed dissection of the region, supplemented by X-ray anatomy; discussions and assigned reading. Limited to 12 students. Laboratory fee for nonmedical students, \$10. (Spring—day)
- 268 Gross Anatomy of Pelvis, Perineum, and Lower Extremity (2)** Calabrisi  
Detailed dissection of the region, supplemented by X-ray anatomy; discussions and assigned reading. Limited to 12 students. Laboratory fee for nonmedical students, \$10. (Spring—day)
- 270 Dissection of the Human Brain (1)** Johnson  
Dissection of the major pathways and nuclei of the brain with consideration of the ventricular system. Conferences and assigned reading. Limited to 15 students. Laboratory fee for nonmedical students, \$10. (Spring—day)
- 272 Autonomic Nervous System (1)** Allan  
Lectures on the development, microscopic and gross anatomy, and function of central and peripheral components of the autonomic nervous system. (Spring—day)

\* Dr. Jacobson is Instructor in Obstetrics and Gynecology in the School of Medicine.



**274 Tissues of the Body (1)** Telford

Lectures on basic concepts in anatomy, with special emphasis on the primary tissues of the body—their histogenesis, growth, functions, regenerative capacities, aging, and death. (Spring—day)

**278 History of Anatomy and Surgery (1)** Goss

Lectures and discussions related particularly to the lives and times of outstanding contributors to the advancement of the science of anatomy and surgery. (Spring—day)

**295 Research (arr.)** Staff

Course content differs each time the course is offered; may be repeated once for credit. Fee to be arranged. (Fall and spring—as arranged)

**299–300 Thesis Research (3–3)** Staff

(Academic year—as arranged)

**398 Advanced Reading and Research (arr.)** Staff

Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

**399 Dissertation Research (arr.)** Staff

Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

## Anthropology\*

*Professor D.M. Taylor (Visiting)*

*Professorial Lecturers J.L. Angel, T.D. Stewart*

*Associate Professors P.F. Gallagher (Chairman), Helmuth Fuchs (Visiting)*

*Associate Professorial Lecturer W.H. Crocker*

*Assistant Professors Ruth Krulfeld, R.K. Lewis, Ruth McKay, Joan Rubin*

*Bachelor of Arts with a major in Anthropology (Departmental).—Prerequisite: the Arts and Letters curriculum, page 63, including Anthropology 1–2.*

*Required: in addition to the general requirements stated on pages 69–73; twenty-four semester hours in Anthropology, which must include 192, and second-group Anthropology courses in each of the following categories: Aspects of Culture (courses numbered in the 150's), Linguistics (courses numbered in the 160's), Ethnology (courses numbered in the 170's), and Physical Anthropology and Archeology (courses numbered in the 180's). Students in the senior year are encouraged to elect courses from the following: Biological Sciences 108; English 125; Geology 154; Mathematics 101; Philosophy 196; Psychology 115, 121; and Statistics 104. Students are normally provided the opportunity to participate in field research conducted each summer by anthropological field schools in states of the American West.*

*Master of Arts in the field of Anthropology.—Prerequisite: the degree of Bachelor of Arts with a major in Anthropology from this University, or equivalent.*

*Required: the general requirements, pages 77–79. All courses must be approved in advance by the adviser. The Master's Comprehensive Examination must be taken before registration for the second half of the thesis work.*

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



*Master of Arts in the field of Linguistics.*—See pages 267–69, and the departments of Germanic Languages and Literatures, Romance Languages and Literatures, and Slavic and Oriental Languages and Literatures.

#### FIRST GROUP

##### \*1–2 Introductory Anthropology (3–3)

Staff

*First half:* survey of man's origin, physical evolution, and culture history.  
*Second half:* survey of the world's cultures, illustrating the principles of cultural behavior. (Academic year—day and evening; summer 1967)

#### SECOND GROUP

##### 150 Comparative Value Systems (3)

Krulfeld

Examination of world views, conceptual systems, and value hierarchies of representative cultures throughout the world. (1967–68 and alternate years: fall—day)

##### 151 Introduction to Primitive Economics (3)

Krulfeld

Introduction to the cross-cultural study of the allocation of goods and services, including an examination of primitive subsistence patterns. (1968–69 and alternate years)

##### 153 Psychological Anthropology (3)

Gallagher, McKay

Relevance of psychoanalytic theories to the cross-cultural study of personality. Cultural determinants of personality formation and mental health. (Fall—day; summer 1967)

##### 154 Mythology and Folklore (3)

Fuchs

Unwritten literature as an expression of imaginative and creative thought; the place of mythology and folklore in social organization, in enculturation, and in social control. (Spring—day)

##### 155 Primitive Religion (3)

Fuchs

Conceptions of the supernatural in nonliterate societies. Examination of religious beliefs and practices. (Fall—day)

##### 156 Witchcraft and Sorcery (3)

Fuchs

The analysis of the functions of witchcraft and sorcery among primitives, with particular attention to their place in social control and organization. (Spring—day)

##### 157 Primitive Social Organization (3)

Fuchs

The analysis of the social organization of primitive peoples; kinship, economic, and political systems. (Fall—day)

##### 158 Art and Culture (3)

Krulfeld

Study of the art of tribal society, including the role of art in culture, influences upon the artist, and beliefs and practices associated with art production. (Spring—day)

##### 159 Ethnoscience (3)

Rubin

Comparative study of branches of knowledge, such as astronomy, botany, mathematics, psychology, technology, and zoology, as these are empirically

\* Anthropology 1–2 is prerequisite to all second-group courses.



derived and systematically arranged in selected preindustrial societies.  
(1967-68 and alternate years: spring—day)

- 161 **Language and Culture** (3) Rubin  
Structure and semantics of systems of human communication; linguistic change; influence of language on world view. (Fall—day)

- 162 **Linguistics in Anthropology** (3) Rubin  
Anthropological field use of structural analysis, sounds of language-phonetics and phonemics, techniques of linguistic recording and analysis, field work. (Fall—as arranged)

- 163 **Language Problems in Developing Nations** (3) Rubin  
Study of language engineering required in nation building and of linguistic maintenance or shift in complex societies. (1967-68 and alternate years: fall—day)

- 170 **Cultures of the Caribbean** (3) Lewis  
Study of the culture history and ways of life of Indian groups of the area during the ethnographic present. (1967-68 and alternate years: spring—day)

- 171 **Native Peoples of North America** (3) Gallagher  
Survey of Indian groups, representative of each of the culture areas of the continent. (1968-69 and alternate years)

- 172 **Native Peoples of South America** (3) Fuchs  
Survey of Indian groups representative of each of the culture areas of the continent. (1967-68 and alternate years: spring—day)

- 173 **Cultures of the Pacific** (3) Lewis  
Study of the culture history and ways of the life of the native peoples of Melanesia, Micronesia, and Polynesia. (1968-69 and alternate years)

- 174 **Far Eastern Communities** (3) Krulfeld  
Community study approach in anthropology as applied to selected villages in such Asian areas as China, Japan, and Malaysia. (Spring—day)

- 175 **Cultures of Southeast Asia** (3) Krulfeld  
Survey of representative Southeast Asian cultures from primitive groups to high civilizations. (Fall—day)

- 176 **Cultures of the Circumpolar Region** (3) Lewis  
Survey of the social and economic adaptations to an extreme climate made by peoples of the northern sub-arctic and arctic regions. (1967-68 and alternate years: fall—day)

- 177 **Cultures of the Near East** (3) Lewis  
Study of the geographic environment, language, religion, and social structure of settled and nomadic peoples of the Near East, with emphasis on the Arab world. (1968-69 and alternate years)

- 178 **Cultures of South and East Africa** (3) Lewis  
Comparative examination of the history, cultural development and contemporary problems of cultures of southern and eastern Negro Africa. (1967-68 and alternate years: fall—day)



- 179 Cultures of West and Central Africa (3)** Lewis  
Comparative examination of the history, cultural development, and contemporary problems of cultures of western and central Negro Africa. (1967-68 and alternate years: spring—day)
- 182 New World Archeology (3)** Gallagher  
Survey of pre-Columbian culture history, from man's entry into the Americas during the Pleistocene Ice Age until the time of the first European contacts. (1967-68 and alternate years: spring—evening)
- 183 Old World Archeology (3)** Lewis  
Survey of the culture of the history of man exclusive of the Americas, from earliest hominid cultures to advanced civilizations and their secondary centers. (1968-69 and alternate years)
- 186 Physical Anthropology (3)** Stewart, Angel  
Study of human variation past and present, seen as a product of physical and cultural evolution. (Spring—evening)
- 192 Anthropological Theory (3)** Krulfeld  
Analysis of the theoretical postulates and assumptions underlying the development of modern cultural anthropology. (Fall—day)
- 193 Anthropological Methods (3)** Crocker  
Approaches to library and field research; conceptual bases and bias in the delineation of problems, in the selection, analysis and organization of data, and in the preparation of the final report. (Fall—day)

### THIRD GROUP

- 261 Field Methods in Sociolinguistics (3)** Rubin  
Principles of interviewing and recording various linguistic dialects; techniques of observation of cultural variables which influence linguistic choice. (1968-69 and alternate years)
- 262 Applied Anthropology (3)** McKay  
Use of anthropological methods and techniques in such specific fields as government, business, law, and medicine. (1968-69 and alternate years)
- 263 Culture Contact and Change (3)** Fuchs  
Western impact on non-Western cultures. Workings and processes of social change as variant cultures and ethical systems interact. (1968-69 and alternate years)
- 264 Museum Techniques (3)** Staff  
Principles of collection, classification, identification, and interpretation of specimens; presentation to the public of the cultural significance of prepared specimens; research and instructional use of the museum. (1968-69 and alternate years)
- 266 Technology (3)** Lewis  
Cross-cultural examination of the form, function, meaning, and use of material culture and the behavior patterns involved in its production. (1968-69 and alternate years)



- 267 Primitive Economics (3)** Krulfeld  
Comparative study of preindustrial systems of production, distribution, and consumption. (1967-68 and alternate years: spring—day)
- 268 Peasant Society (3)** Krulfeld  
Cross-cultural analysis of peasant societies, including an examination of their manner of functioning within their larger social, economic, and cultural context. (1968-69 and alternate years)
- 273 Culture of Poverty (3)** Rubin  
Cross-cultural consideration of basic assumptions about the life of the poor within pluralistic societies with the aim of gaining theoretical insights into the nature of culture itself. (1968-69 and alternate years)
- 295 Research (arr.)** Staff  
May be repeated for credit. (Fall and spring—as arranged)
- 299-300 Thesis Research (3-3)** Staff  
(Academic year—as arranged; summer 1967—Anthropology 299)

## Art\*

*Professors* D.C. Kline, W.A. MacDonald  
*Professorial Lecturer* Grace Evans  
*Associate Professors* L.P. Leite (*Chairman*), Roland Fleischer, F.S. Grubar  
*Assistant Professor* D.H. Teller (*Curator of Art*)  
*Studio Lecturers on the Staff of the Corcoran School of Art* E.M. Archer, Jack Perlmutter, Alexander Russo, Joseph Taney, Teruo Hara, James Twitty, Berthold Schmutzhart, Malcolm Wright, Timothy Corkery, Pietro Lazzari, Brockie Stevenson, William Taylor, William Woodward, James Dillinger, Thomas Downing, Robert Foster, Samuel Holvey, Ed McGowin, Jon Schoonmaker, Arthur Terry, Frank Wright  
*Instructors* H.I. Gates, F.O. Griffith, Lilien Hamilton  
*Lecturers* R.A. Madigan, Patsy Smith

*Bachelor of Arts with a major in Art History and Theory (Departmental).*—Prerequisite: the Arts and Letters curriculum, page 63, or equivalent, including Art 31-32.

Required: the general requirements, pages 69-73; eighteen semester hours, as follows: Art 101 or 102, 104 or 105, 110, 112, 113 or 114, 117 or 118; twelve semester hours selected from second-group courses, or from third-group courses open to undergraduates with the approval of the instructor; and the passing of a comprehensive examination taken in the senior year. Students intending to major in this field are urged to acquire a reading knowledge of a foreign language, preferably French or German, at the earliest possible convenience.

*Bachelor of Arts with a major in Fine Arts (Departmental).*—Prerequisite: the Arts and Letters curriculum, page 63, or equivalent, including Art 21-22 and 31-32.

Required: in addition to the general requirements, pages 69-73, twenty-seven semester hours in Fine Arts; Philosophy 162 or equivalent; six hours of Art History selected from second-group courses or from third-group courses open to undergraduates with

\* Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.



the approval of the instructor. A maximum of twelve of the required twenty-seven hours in Fine Arts may be taken in any one of the following fields: painting, design, sculpture, graphics, and ceramics; the remainder are to be selected from three of these fields.

*Bachelor of Arts with a major in Classical Archeology and Greek (Departmental).*—This interdepartmental major may be arranged in conjunction with the Department of Classical Languages and Literatures. Prerequisite: the Arts and Letters curriculum, page 63, Greek 13–14, and History 39–40.

Required: in addition to the requirements, pages 69–73; twelve semester hours of second-group courses in Greek; Anthropology 183; Art 101, 102, 103, 111; History 109; Philosophy 111. A reading knowledge of French or German, preferably both, is strongly recommended.

*Master of Arts in the field of Art History and Criticism with concentrations in Classical Art and Archeology, Art of the Americas, Renaissance and Baroque Art, Contemporary Art, and Medieval Art.*—Prerequisite: the degree of Bachelor of Arts with a major in Art History and Theory at this University, or equivalent.

Required: the general requirements, pages 77–79. As much as possible of the twenty-four semester hours in course work should be in third-group courses. A general written Master's Comprehensive Examination on the problems in the field of Art History and Criticism; a written thesis embodying the results of research on some specific topic in the history and criticism of art.

*Master of Arts in the field of Museology.*—Prerequisite: the degree of Bachelor of Arts with a major in Art History and Theory at this University, or equivalent.

Required: the general requirements, pages 77–79. Fifteen semester hours in museum courses: Art 146, 271–72; nine semester hours divided between courses in art history and courses in related fields outside the Department of Art; a general written Master's Comprehensive Examination in the field of museology; a written thesis embodying the results of research on some specific aspect of museums or museum work.

*Master of Fine Arts in the field of Painting, Sculpture, Ceramics, or Graphics.*—Prerequisite: the degree of Bachelor of Arts with a major in Fine Arts in the field of Painting, Sculpture, Ceramics, or Graphics at this University, or equivalent.

Required: the general requirements, pages 77–79. As much as possible of the twenty-four semester hours in course work should be in third-group courses. A creative thesis in painting, sculpture, ceramics, or graphics; a paper discussing some technical phase of the problem illustrated by the thesis.

*Bachelor of Arts in Education with a teaching field in Art.*—Prerequisite: the Education curriculum, pages 65–66.

Required: the Art option and professional courses listed on pages 96–97.

## ART HISTORY AND THEORY

### FIRST GROUP

#### 1 Art Appreciation (3)

Language and function of art in its various media; development of styles, aesthetic principles, theories, and the ideas in art through the ages. Primarily for nonmajors. (Fall and spring—day; summer 1967)

Hamilton, Smith

#### 31–32 Survey of Western Art (3–3)

Survey of the arts in the Western World from prehistoric to modern times. A foundation for further study in the history of Art. (Academic year—day and evening; summer 1967)

Hamilton, Smith

#### 71–72 Introduction to the Arts in America (3–3)

Painting, sculpture, and architecture of America, with selected references to crafts and popular arts. *First half:* from Colonial beginnings to the

Kline, Grubar



Republican Age. *Second half*: from early 19th century to the present.  
(Academic year—day and evening; summer 1967)

## SECOND GROUP

- 101 **Greek and Roman Architecture** (3) MacDonald  
(Fall—day; summer 1967)
- 102 **Greek and Roman Sculpture** (3) MacDonald  
(Spring—day and evening)
- 103 **Classical Iconography** (3) MacDonald  
Origin and development of myths in classical art. (Not offered 1967–68)
- 104 **Renaissance Art in Italy I** (3) Evans  
Early developments from the 13th to the 15th century. (Fall—day)
- 105 **Renaissance Arts in Italy II** (3) Evans  
High Renaissance and Mannerism. (Fall—day; summer 1967)
- 106 **Renaissance Art in the North I** (3) Fleischer  
Fifteenth Century painting in the Netherlands, Germany, France, Spain, and Portugal. (Fall—day)
- 107 **Renaissance Art in the North II** (3) Fleischer  
Sixteenth Century painting in the Netherlands, Germany, France, Spain, and Portugal. (Spring—day; summer 1967)
- 108 **18th Century Art in Europe** (3) Fleischer  
Development of painting, sculpture, and architecture. (Fall—day)
- 109 **19th Century Art in Europe** (3) Leite  
Painting and sculpture from Academism to Symbolism. (Spring—day; summer 1967)
- 110 **Contemporary Art** (3) Leite  
Painting and sculpture in 20th century Europe. (Spring—day)
- 111 **Classical Archeology** (3) MacDonald  
Archeological monuments of classical civilizations, with intensive study of one or more areas selected from architecture, sculpture, painting, or minor arts. (Fall—day)
- 112 **Art of Egypt and the Ancient Orient** (3) MacDonald  
Study of the art of Mesopotamia, Anatolia, Egypt, and Persia. (Spring—day)
- 113 **Baroque Art in Italy** (3) Leite  
Development of painting, sculpture, and architecture in 16th and 17th century Italy. (Fall—day; summer 1967)
- 114 **Baroque Art in the North** (3) Fleischer  
Development in painting, sculpture, and architecture in the 16th and 17th centuries in Holland, Flanders, Spain, France, Germany, and England. (Spring—day; summer 1967)



- 115 **Christian Iconography** (3) Leite  
Origins and development of Christian symbols and themes from early Christian to modern times. (Not offered 1967-68)
- 117 **Medieval Art I** (3) Evans  
Architecture, sculpture, and painting of the early Christian and Byzantine periods. (Fall—day)
- 118 **Medieval Art II** (3) Evans  
Architecture, sculpture, and painting of the Romanesque and Gothic periods. (Spring—day; summer 1967)
- 119 **Pre-Romanesque Art in the North** (3) Evans  
Art of the Carolingian and Merovingian periods. (Spring—day)
- 120 **Art of China and Japan** (3) Kline  
Architecture, painting, and sculpture of China, Korea, and Japan. (Fall—day)
- 141 **Interior Decoration** (3) Kline  
Principles of decoration dealing with furniture designs and ensemble layout, draperies, color, accessories, and lighting. (Not offered 1967-68)
- 142 **House Planning** (3) Kline  
Contemporary house for family living, including site problems, the case plan, materials of building, and climate conditioning. (Not offered 1967-68)
- 145 **Folk Arts in America** (3) Kline  
Ceramics, woodcarving, ironwork, decorative painting, weaving, and other crafts. (Not offered 1967-68)
- 146 **Principles of Museum Work** (3)  
Introduction to the history and development of museums; problems of museum administration, connoisseurship, cataloguing, installation, conservation, and educational service. Prerequisite to graduate study in museology. Field trips to galleries and museums arranged. (Fall and spring—evening)
- 148 **19th Century American Painting** (3) Grubar  
(Fall—day)
- 149 **19th Century American Sculpture** (3) Grubar  
(Spring—day; summer 1967)

**THIRD GROUP**

- \*203 **Primitive Art** (3) Kline  
Arts of prehistoric and primitive man in Europe, the pre-Columbian Americas, Oceania, and Africa. (Spring—day)
- 207 **Modern Architecture** (3) Kline  
Development of modern architecture and building technology in Europe and America from the late 19th century to the present. (Spring—day)

\* May be taken for undergraduate credit with the approval of the instructor.



- 216 **Medieval Painting** (3) Evans  
Painting and the decorative arts. (Fall—day)
- 220 **Seminar: Baroque Art of the 17th Century** (3) Fleischer  
(Spring—day)
- 221 **Seminar: Northern Renaissance Art** (3) Fleischer  
(Fall—day)
- 243 **Seminar: American Art** (3) Grubar, Kline  
Specific area announced in *Schedule of Classes*. (Fall and spring—day)
- 244 **Seminar: 19th Century Art** (3) Leite  
Specific area announced in *Schedule of Classes*. Reading knowledge of French desirable. (Not offered 1967–68)
- 245 **Seminar: 20th Century Art** (3) Grubar, Leite  
Specific area announced in *Schedule of Classes*. (Fall and spring—day)
- 246 **Seminar: Classical Art** (3) MacDonald  
Specific area announced in *Schedule of Classes*. (Fall—evening)
- 247 **Seminar: Medieval Art** (3) Evans  
(Spring—day)
- 261 **Art Theory and Criticism** (3) Staff  
History of theory and criticism; area of concentration selected from Classical, Medieval, Renaissance, and Modern fields. (Fall and spring—day; summer 1967)
- 271–72 **Museum Techniques** (6–6) Staff  
Intern training in museum work. Work of each semester concentrated into a six-week period, Monday through Friday, 9 am–5 pm. Prerequisite: Art 146. (Academic year—as arranged; summer 1967)
- 289–90 **Thesis Research** (3–3) Staff  
(Academic year—as arranged; summer 1967)

## FINE ARTS\*

### FIRST GROUP

- 10 **Art Structure** (3) Teller  
Basic studio course for non-art majors. Studies in line, form, color, texture, and their everyday use. Material fee, \$10. (Not offered 1967–68)
- 21–22 **Basic Design** (3–3) Teller, Gates  
Fundamental studies of principles and elements of design. *First half*: study of two-dimensional design. *Second half*: three-dimensional studies. Material fee, \$10 a semester. (Academic year—day and evening)

\* Art 21–22 is prerequisite to all other studio courses. Courses designated CSA are taught at the Corcoran School of Art.



- 41-42 **Drawing I** (3-3) CSA McGowin, F. Wright, Schmutzhart  
Introductory course including traditional and contemporary techniques, mechanical and visual perspective. (Academic year—day and evening; summer 1967)
- 51-52 **Ceramics I** (3-3) CSA M. Wright  
Basic techniques for clay preparation, hand forming, wheel throwing, and the application of slip glazes and vitreous glazes through workshop and illustrated lectures. Laboratory fee\*, \$25 a semester. (Academic year—day and evening; summer 1967)
- 57-58 **Introduction to Graphic Techniques** (3-3) Griffith  
Exploration of the methods of intaglio, relief, block printing, and other composite methods. Studio fee, \$10 a semester. (Academic year—day and evening)
- 61-62 **Watercolor** (3-3) CSA Stevenson  
Study of watercolor techniques and styles, including sketching as a basis for technique. (Academic year—day; summer 1967)
- 65-66 **Painting I** (3-3) CSA Woodward  
Basic color composition and fundamental painting techniques. (Academic year—day and evening; summer 1967)
- 81-82 **Sculpture I** (3-3) CSA Lazzari, Taylor  
Armature building, clay and plaster modeling, casting techniques. (Academic year—day and evening; summer 1967)

**SECOND GROUP†**

- ‡121-22 **Design: Structured** (3 or 6-3 or 6) Gates  
A structured course that extends the student's design experience through a series of problems involved with both two- and three-dimensional media. Emphasis on problem solving through experimentation with materials and tools. Material fee, \$10 a semester. (Academic year—day and evening)
- 123-24 **Design: Individual Problems** (3-3) Staff  
Emphasis on the individual student and the problems and materials that specifically interest him in any area of design. Prerequisite: Art 121-22. (Academic year—as arranged; summer 1967)
- § 125-26 **Painting II** (3 or 6-3 or 6) CSA Twitty, Downing  
Development of basic concepts carried into personal statement. Study of stylistic approaches from realistic to abstract. (Academic year—day and evening; summer 1967—Art 125-26 (3-3))
- § 127-28 **Painting III** (3 or 6-3 or 6) CSA Russo, Downing  
Exploratory efforts in the development of style, using advanced methods and materials. (Academic year—day and evening; summer 1967—Art 127-28 (3-3))

\* Laboratory fee to be paid at the Corcoran School of Art.

† Second-group courses may be repeated for credit with the approval of the Department.

‡ Fine Arts majors with concentrations in design may elect 6 semester hours of credit.

§ Fine Arts majors and Master of Fine Arts candidates should elect 6 semester hours of credit.



- \*131-32 **Ceramics II** (3 or 6-3 or 6) CSA Hara  
Basic techniques in clay and glaze formation, advanced wheel throwing and hand forming. Laboratory fee†, \$30 a semester. (Academic year—day and evening; summer 1967—Art 131-32(3-3))
- 137-38 **Painting Workshop in Materials, Methods, and Mural Arts** (3-3) CSA Russo, Woodward  
Preparation of grounds; study of development of painting techniques: egg tempera, tempera emulsion, mixed techniques, glazing and polymers; mural arts. (Academic year—day; summer 1967)
- 139-40 **Design Workshop** (3-3) Gates  
Exploration of design possibilities in wood, metal, textile, plastics, and other materials. Studio fee, \$10 a semester. (*First half*: not offered 1967-68. *Second half*: offered only as part of the Art Program in Scandinavia.)
- 143-44 **Serigraphy** (3-3) Teller  
Advanced problems in serigraphy; emphasis on its aesthetic possibilities. Studio fee, \$10 a semester. Prerequisite: Art 57-58. (Academic year—day; summer 1967)
- \*151-52 **Ceramics III** (3 or 6-3 or 6) CSA Hara  
Advanced glaze calculation, experimentation in reduction firing, individual problems in formation techniques, and problems in series production for the studio artist. Advanced decorating and finishing techniques. Laboratory fee†, \$30 a semester. (Academic year—day and evening)
- \*153-54 **Etching** (3 or 6-3 or 6) Griffith  
Prerequisite: Art 57-58. (Academic year—day and evening; summer 1967—Art 153-54 (3-3))
- \*157-58 **Relief Printing** (3 or 6-3 or 6) CSA Perlmutter, Griffith  
Relief printing and wood block, with special reference to Eastern techniques. Experiments with material printing. (Academic year—day; summer 1967—Art 157-58 (3-3))
- 159-60 **Drawing II** (3-3) CSA Russo, Dillinger  
Special problems in anatomy of the life model in action and repose. (Academic year—day and evening)
- 163-64 **Welding** (3-3) Gates  
Special problems in welded sculpture. Material fee, \$10 a semester. (Academic year—day; summer 1967)
- \*165-66 **Painting, Drawing, Composition** (3 or 6-3 or 6) CSA Archer  
Study of nature and the principles of the Renaissance and 19th century masters. Primarily for nonmajors. (Academic year—day and evening)
- 171-72 **Calligraphy and Lettering** (3-3) CSA Foster  
Design and execution of finished lettering for reproduction, type, and layouts. (Academic year—day)

\* Fine Arts majors and Master of Fine Arts candidates should elect 6 semester hours of credit.  
† Laboratory fee to be paid at the Corcoran School of Art.



**173-74 Advanced Calligraphy and Lettering (3-3) CSA** Foster

Study of the design and appropriate use of present day letter forms followed by a consideration of current type faces and their use in contemporary typography. (Academic year—day)

**\*175-76 Design Projects (3 or 6-3 or 6) CSA** Holvey and Staff

Advanced problems in various areas. Individual creative projects. (First half: not offered 1967-68. Second half: spring—day and evening.)

**177-78 Rendering (3-3) CSA** Holvey

Methods and techniques of visual representation as used in the professional design fields, with a survey of modern illustrative styles. (Academic year—day)

**\*179-80 Sculpture II (3 or 6-3 or 6) CSA** Lazzari, Taylor

Three-dimensional compositions, bas-relief techniques. Basic principles of wood and stone carving. (Academic year—day and evening; summer 1967—Art 179-80 (3-3))

**\*183-84 Advertising Design (3 or 6-3 or 6) CSA** Taney and Staff

Study of layout, letter form, illustration, photography, and type. Prerequisite: Art 175-76. (Academic year—day and evening)

**\*185-86 Advanced Advertising Design (3 or 6-3 or 6) CSA** Taney and Staff

Advanced problems with emphasis on page and small space advertisement: brochures and posters. Prerequisite: Art 183-84. (Academic year—day and evening)

**187-88 Advertising Design: Advanced Photography (3-3) CSA**

(Academic year—day)

**\*189-90 Sculpture III (3 or 6-3 or 6) CSA** Lazzari, Taylor

Advanced problems in sculpture as related to architecture. Experience in following specifications. (Academic year—day and evening; summer 1967—Art 189-90 (3-3))

**THIRD GROUP †****249 Theory of Design (3)** Teller

Application of design principles to painting, architecture, sculpture, and minor arts of today. Relationship of design principles to the contemporary artist and his work. Open to undergraduate students with permission of instructor. (Fall—as arranged; summer 1967—offered as part of the Art Program in Scandinavia)

**\*251-52 Ceramics IV (3 or 6-3 or 6) CSA** Hara

Personal glaze and clay formulation. Methods of instruction for the student who plans to teach. Laboratory fee‡, \$30 a semester. (Academic year—day and evening)

**\*253 Ceramics V (3 or 6) CSA** Hara

Laboratory fee‡, \$30. (Fall and spring—as arranged)

\* Fine Arts majors and Master of Fine Arts candidates should elect 6 semester hours of credit.

† All third-group courses may be repeated for credit with the approval of the Department.

‡ Laboratory fee to be paid at the Corcoran School of Art.



- \*265-66 **Painting IV** (3 or 6-3 or 6) CSA Staff  
(Academic year—day and evening; summer 1967—Art 265-66 (3-3))
- \*275 **Painting V** (3 or 6) CSA Staff  
(Fall and spring—as arranged; summer 1967—Art 275 (3))
- \*279-80 **Sculpture IV** (3 or 6-3 or 6) CSA Taylor  
(Academic year—as arranged; summer 1967—Art 279-80 (3-3))
- \*281 **Sculpture V** (3 or 6) CSA Staff  
(Fall and spring—as arranged; summer 1967—Art 281 (3))
- 299-300 **Thesis Research** (3-3) Staff  
(Academic year—as arranged; summer 1967)

## Biochemistry†

Professor C.R. Treadwell (*Chairman*)

Professorial Lecturers Sidney Udenfriend (*Intermediary Metabolism*), C.A. Kue-ther, W.W. Burr, Jr. (*Isotopes*), R.W. Albers, Roscoe Brady, Jr., C.J. Epstein (*Inherited Metabolic Disease*), Fred Bergmann (*Biochemical Genetics*), Arnold Schaefer, Sidney Shifrin, Edward Steers, Jr.

Associate Professors B.W. Smith, G.V. Vahouny, J.M. Bailey

Assistant Professor A.S. Brecher

Special Lecturers Walter Mertz, Herbert Weissbach, A.C. Chung

*Master of Science in the field of Biochemistry.*—Prerequisite: a Bachelor's degree. The undergraduate program must have included the following courses, or equivalent: Biological Sciences 1-2; Chemistry 11-12, 22, 51-52; Physics 1-2.

Required: the general requirements, pages 77-79, including Biochemistry 221-22, 227, 299-300. The remaining courses are to be selected from Biochemistry 224, 232, 241, 262, 295 or, with the approval of the adviser, from graduate courses in Microbiology, Chemistry, Physiology, or Pharmacology. It is usually not possible to arrange courses and research so that the student can be assured of completing all of the required work in one academic year.

*Doctor of Philosophy fields of study in Biochemistry:* Amino Acid Metabolism; Animal Nutrition; Biochemistry of Cancer; Biochemistry of Tissue Culture; Carbohydrate Metabolism; Chemistry and Metabolism of Carbohydrates, Lipids, Proteins; Complex Lipids; Intermediary Metabolism; Lipids; Metabolism of Purines and Pyrimidines; Metabolic Relationships of Insulin; Protein Biosynthesis; Protein Metabolism; Endocrinology; Metabolism; Metabolism of Connective Tissue; Nutrition; Tissue Respiration; and Vitamins.—See pages 77-78, 79-80 for requirements for the degree.

### 221-22 General Biochemistry (4-4)

Vahouny

Lecture and laboratory course for nonmedical students. Prerequisite: Chemistry 52. Material fee, \$20 a semester. (Academic year—day)

### 224 Biochemistry of the Enzymes (1)

Lectures on biochemistry of enzymes and enzyme reactions. Prerequisite: Biochemistry 221. (1968-69 and alternate years: spring—day)

\* Fine Arts majors and Master of Fine Arts candidates should elect 6 semester hours of credit.

† Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.



- \*225 Biochemical Procedures (3)** Smith and Staff  
A laboratory course. Material fee for nonmedical students, \$16.  
(Fall and spring—day)
- \*227 Biochemistry Seminar (1)** Staff  
The current literature in the field of biochemistry, mainly for graduate students, but open to a limited number of specially qualified medical students. (Fall and spring—day)
- 232 Proteins and Amino Acids (1)** Steers, Shifrin  
Prerequisite: Biochemistry 221. (Spring—day)
- 241 Isotopes (3)** Burr  
Theoretical characterization of isotopes and their applications in biology. Attention given to counting, health physics and radiation safety, autoradiography, and chromatography. Laboratory fee for nonmedical students, \$16. (Spring—day)
- 251 Carbohydrate Metabolism (1)**  
Prerequisite: Biochemistry 201 or 222. (1967–68 and alternate years: spring—day)
- 252 Biochemistry of the Brain (1)** Albers, Brady  
Primarily for medical students; open to limited number of graduate students. Recent biochemical developments in structure, functions, and metabolic processes unique to the brain. (Spring—day)
- 254 Human Nutrition (1)** Pollack†  
Primarily for medical students; open to limited number of graduate students. Application of nutritional principles in humans. (Spring—day)
- 256 Biochemistry of Organ Function (1)** Kramer  
Primarily for medical students; open to limited number of graduate students. Emphasis on biochemical processes unique to particular organ systems and application of these processes to evaluation of function. (Spring—day)
- 258 Inherited Metabolic Diseases (1)** Epstein  
Primarily for medical students; open to limited number of graduate students. Lectures on the contribution of molecular biology to understanding human mutations and hereditary diseases. Specific disease states and the genetics of protein structure discussed. Prerequisite: Biochemistry 222. (Spring—day)
- 260 Biochemistry of the Steroids (1)** Dodek‡  
Primarily for medical students; open to limited number of graduate students. (Spring—day)
- \*262 Biochemistry of the Lipids (1)** Vahouny  
Primarily for graduate students; open to a maximum of 15 medical students. Research techniques for the study of lipid biochemistry are considered. 1967–68 and alternate years: chemistry, properties, and occurrence of the important classes of biological lipids. 1968–69 and alternate

\* Content differs each time the course is offered; may be repeated for credit.

† Dr. Pollack is Clinical Professor of Medicine in the School of Medicine.

‡ Dr. Dodek is Clinical Instructor in Obstetrics and Gynecology in the School of Medicine.



years: metabolism of lipids, including digestion, energy production, biosynthesis, and function in specialized tissues and subcellular structures.  
(Spring—day)

266 **Biochemical Genetics** (1) Bergmann  
Primarily for medical students; open to limited number of graduate students. (Spring—day)

\*295 **Research in Biochemistry** (arr.) Staff  
For freshman and sophomore medical students and graduate students. Participation in a project under investigation in the Department or a project in related fields suggested by the student and approved by the Staff. (Fall and spring—as arranged)

299–300 **Thesis Research** (3–3) Staff

398 **Advanced Reading and Research** (arr.) Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

399 **Dissertation Research** (arr.) Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

## Biological Sciences†

*Professors* I.B. Hansen (*Chairman*) Edith Mortensen, S.C. Munson, A.H. Desmond, R.L. Weintraub, M.W. Schein (*Visiting*), Jay Barton II (*Visiting*), H.W. Olson (*Visiting*), D.G. Barry (*Visiting*), T.G. Overmire (*Visiting*)

*Professorial Lecturers* K.C. Kates, L.B. Smith

*Associate Professors* J.M. Kaper (*Research*), Caroline Adams, Kittie Parker, D.S. Douglas, B.J. Leach, I.W. Deep (*Visiting*), J.J.W. Baker (*Visiting*)

*Associate Professorial Lecturers* J.R. Buchheit, J.G. Palmer, R.S. Sigafos, Robert Stewart, W.A. Shropshire, Jr., H.M. Cathey

*Assistant Professors* S.O. Schiff, Gloria Hammack, L.J. Tilly, Norma Enochs (*Visiting*)

*Assistant Professorial Lecturers* F.B. Abeles, R.G. Clark, M.M. Margulies

*Lecturers* Dorothy Hoelzer, Jessie Dickens

*Adjunct Lecturers* T.E. Bowman, R.F. Cressey, W.D. Hope, M.L. Jones, L.S. Kornicker, D.L. Pawson, H.A. Rehder, Joseph Rosewater

*Bachelor of Arts or Bachelor of Science with a major in Biology (Departmental).—Prerequisite:* the Arts and Letters or the Science curriculum, respectively, pages 63–64, including Biological Sciences 1–2, or equivalent, and Chemistry 11–12.

*Required:* in addition to the general requirements, pages 69–73, a minimum of twenty-four semester hours of second-group courses which should include at least six hours in Biology, six in Botany, and six in Zoology; and the passing of the Biology major examination at the end of the senior year.

*Bachelor of Arts or Bachelor of Science with a major in Botany (Departmental).—Prerequisite:* the Arts and Letters or the Science curriculum, respectively, pages 63–64, including Biological Sciences 1–2, or equivalent, and Chemistry 11–12.

\* Content differs each time the course is offered; may be repeated for credit.

† Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



Required: in addition to the general requirements, pages 69–73, a minimum of twenty-four semester hours of second-group courses in Botany or in a combination of Botany and Biology; and the passing of the Botany major examination at the end of the senior year.

*Bachelor of Arts or Bachelor of Science with a major in Zoology (Departmental).*—Prerequisite: the Arts and Letters or the Science curriculum, respectively, pages 63–64, including Biological Sciences 1–2 and Chemistry 11–12.

Required: in addition to the general requirements, pages 69–73, a minimum of twenty-four semester hours of second-group courses in Zoology or Biology; and the passing of the Zoology major examination at the end of the senior year.

*Master of Science in the field of Biology.*—Prerequisite: the equivalent of a Bachelor's degree from this University with a major in Biology, Botany, or Zoology.

Required: the general requirements, pages 77–79.

*Master of Science in the field of Botany.*—Prerequisite: the equivalent of a Bachelor's degree from this University with a major in Botany or Biology.

Required: the general requirements, pages 77–79.

*Master of Science in the field of Zoology.*—Prerequisite: the equivalent of a Bachelor's degree from this University with a major in Zoology or Biology.

Required: the general requirements, pages 77–79.

*Doctor of Philosophy fields of study in Biology: Cell Physiology, Cytology, Molecular Genetics, and Viral Leukemia.*—See pages 77–78, 79–80 for requirements for the degree.

*Doctor of Philosophy fields of study in Botany: Cytogenetics, Microbial Genetics, Mycology, Paleobotany, Photobiology, Plant Ecology, Plant Pathology, Plant Physiology—Microorganisms, Plant Physiology—Vascular Plants, Taxonomy, and Virology.*—See pages 77–78, 79–80 for requirements for the degree.

*Doctor of Philosophy fields of study in Zoology: Aquatic Ecology; Comparative Physiology; Comparative Vertebrate Endocrinology; Entomology—Insect Physiology; Histophysiology; Radiation Biology; Taxonomy, Anatomy, and Physiology of Mollusks; Vertebrate Embryology and Morphogenesis; and Vertebrate Ichthyology.*—See pages 77–78, 79–80 for requirements for the degree.

*Bachelor of Arts in Education with a teaching field in Biology.*—Prerequisite: the Education curriculum, pages 65–66.

Required: the Biology option and the professional courses listed on pages 96–97.

## BIOLOGY\*

### FIRST GROUP

#### \*1–2 Introductory Biology (4–4)

Munson and Staff

Lecture (3 hours), laboratory (3 hours). Introductory course leading to all second- and third-group courses in biology, botany, and zoology; also provides the nonscience student with an understanding of the life sciences. Material fee, \$10 a semester. (Academic year—day and evening; summer 1967)

### SECOND GROUP \*

#### 108 Organic Evolution (3)

Munson

Theories of organic evolution and present ideas on principal lines of development in the plant and animal kingdoms; review of mechanisms involved in the process. (Spring—day)

\* Biological Sciences 1–2 is prerequisite to all second-group courses in Biology, Botany, and Zoology, except by permission of the instructor.



**112 Bacteriology (4)**

Margulies

Lecture (2 hours), laboratory (4 hours). Introduction to structure, activities, biological roles, and industrial uses of bacteria and some related organisms. Prerequisite: one year of chemistry. Material fee, \$11. (Fall—evening)

**115-16 Cytology (3-3)**

Schiff

Lecture (1 hour), laboratory (4 hours). Morphological and physiochemical properties of plant and animal cells and their components. Analysis of slides, cytological techniques, and preparation of slides. Recommended: one year of chemistry. Material fee, \$11 a semester. (Academic year—day)

**119 Cell Biochemistry (4)**

Weintraub

Lecture (2 hours), laboratory (3 hours). Introduction to composition and metabolism of generalized cells of plants, animals, and microorganisms. Prerequisite: Chemistry 11-12, 51; or equivalent. Material fee, \$11. (Fall—day)

**120 Cell Physiology (4)**

Weintraub

Lecture (2 hours), laboratory (3 hours). Study of cell processes including absorption, excretion, growth, division, contraction, conduction, locomotion, and photosynthesis. Prerequisite: Biological Sciences 119 or permission of instructor. Material fee, \$11. (Spring—day)

**127 Genetics (3)**

Introductory course dealing with nuclear and nonnuclear organisms, covering nature, transmission, and functioning of genetic material. (Fall and spring—day; summer 1967)

**171 Undergraduate Research (arr.)**

Staff

Admission by permission of the staff member concerned. May be repeated for credit. (Fall and spring—as arranged)

**THIRD GROUP****206 Seminar: Radiation Biology (3)**

Schiff

Actions of different kinds of radiation on living material at subcellular, cellular, and organismal levels; effects of environmental alterations on radiation-induced damage; practical considerations of exposure to radioactivity. Prerequisite: Biological Sciences 167 or equivalent. (Spring—evening)

**207 Seminar: Origin of Life (3)**

Weintraub

(1967-68 and alternate years: fall—evening)

**220 Seminar: Cell Physiology (3)**

Shropshire

Review in depth of selected topics. (1967-68 and alternate years: spring—evening)

**227 Seminar: Genetics (3)**

(1968-69 and alternate years)

**252 Seminar: Biology of Viruses (3)**

Kaper

(1968-69 and alternate years)



**295 Research (arr.)**

Investigation of special problems. May be repeated for credit.  
(Fall and spring—as arranged; summer 1967)

Staff

(Fall

**299-300 Thesis Research (3-3)**

(Academic year—as arranged; summer 1967)

Staff

**FOURTH GROUP****398 Advanced Reading and Research (arr.)**

Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

Staff

**399 Dissertation Research (arr.)**

Limited to Doctor of Philosophy candidates. May be repeated for credit.  
(Fall and spring—as arranged; summer 1967)

Staff

**BOTANY****SECOND GROUP \*****105 Field Botany—Seed Plants (3)**

Lecture (2 hours), laboratory and field (4 hours). Primarily for nonspecialists, emphasizing local flora. (Fall—day)

Parker

**106 Field Botany—Lower Plants (3)**

Lecture (1 hour), laboratory and field (4 hours). Primarily for nonspecialists, emphasizing algae, mosses, and ferns. (1968 and alternate summers)

Adams

**109 Plant Morphology (3)**

Lecture (1 hour), laboratory (4 hours). Anatomical, comparative study of root, stem, leaf, and flower of Angiosperms. Meristem development and morphogenesis of organs. Material fee, \$8. (Fall—day)

Adams

**110 Plant Morphology (3)**

Lecture (2 hours), laboratory (2 hours). Structure, development, and life cycle of representative Algae, Bryophytes, Pteridophytes, and Gymnosperms. Material fee, \$8. (Spring—day)

Adams

**125 Plant Taxonomy (4)**

Lecture (2 hours), laboratory and field (4 hours). (Spring—day)

Parker

**132 Mycology (4)**

Lecture (2 hours), laboratory (3 hours). Material fee, \$8. (1968-69 and alternate years)

**134 Plant Pathology (4)**

Lecture (2 hours), laboratory (3 hours). Material fee, \$8. (1967-68 and alternate years: spring—evening)

\* Biological Sciences 1-2 is prerequisite to all second-group courses in Biology, Botany, and Zoology, except by permission of the instructor.



- 135 **Plant Physiology** (4) Abeles  
Lecture (2 hours), laboratory (4 hours). Prerequisite: Chemistry 11-12.  
Material fee, \$11. (Fall—day)
- 141 **Plant Ecology** (4) Sigafoos  
Lecture (2 hours), laboratory and field (4 hours). (1968-69 and alternate years)

## THIRD GROUP

- 221 **Seminar: Plant Taxonomy** (3) Parker  
(1967-68 and alternate years: fall—evening)
- 232 **Seminar: Mycology and Plant Pathology** (3)  
(1967-68 and alternate years: spring—evening)
- 235 **Seminar: Plant Physiology** (3) Cathey  
(1968-69 and alternate years)
- 242 **Seminar: Plant Ecology** (3) Sigafoos  
(1967-68 and alternate years: spring—evening)
- 299-300 **Thesis Research** (3-3) Staff  
(Academic year—as arranged; summer 1967)

## ZOOLOGY

## SECOND GROUP \*

- 101-2 **Invertebrate Zoology** (3-3) Mortensen  
Lecture (1 hour), laboratory (4 hours). Systematic study of invertebrate forms, including morphology, physiology, classification, life histories, and phylogenetic relationships. Material fee, \$11 a semester. (Academic year—day)
- 104 **Comparative Vertebrate Anatomy** (4) Leach  
Lecture (2 hours), laboratory (4 hours). Origin, early history, gross and comparative anatomy of vertebrates. Dissection of representative present-day forms. Material fee, \$11. (1967-68 and alternate years: fall and spring—day; 1968-69 and alternate years: fall—day and evening, spring—day)
- 143 **Animal Ecology** (4) Tilly  
Lecture (3 hours), laboratory and field (3 hours). Laboratory fee, \$8. (Fall—day)
- 144 **Aquatic Ecology** (4) Tilly  
Lecture (3 hours), laboratory and field (3 hours). Principles applied to aquatic systems with special reference to physicochemical properties, typical habitats and communities. Prerequisite: Biological Sciences 143 or permission of instructor. Laboratory fee, \$8. (Spring—day)

\* Biological Sciences 1-2 is prerequisite to all second-group courses in Biology, Botany, and Zoology, except by permission of the instructor.



- 145 Introduction to Vertebrate Embryology (3)** Hansen  
Lecture (1 hour), laboratory (4 hours). Origin and early development of the individual, formation of organ systems. Emphasis on frog, chick, and pig, with reference to human embryo. Material fee, \$8. (1967-68 and alternate years: fall—evening, spring—day; 1968-69 and alternate years: fall and spring—day; summer 1967)
- 148 Histology (4)** Desmond  
Lecture (2 hours), laboratory (4 hours). Introduction to microscopical anatomy of normal tissues and organs. Material fee, \$8. (1967-68 and alternate years: fall—day, spring—evening; 1968-69 and alternate years: fall and spring—day; summer 1967)
- 152 Protozoa (3)** Mortensen  
Lecture (1 hour), laboratory (4 hours). Introduction to protozoa: classification, life histories, and physiology; emphasis on free-living types. Material fee, \$8. (1967-68 and alternate years: spring—evening)
- 155 Parasitology (3)** Kates  
Lecture (1 hour), laboratory (4 hours). Introduction to animal parasitology; survey of parasitic types from protozoa through arthropods. Material fee, \$8. (1967-68 and alternate years: fall—evening)
- 157 Comparative Endocrinology (3)** Leach  
Endocrine systems of vertebrate classes. Differences and similarities between endocrine mechanisms of fish, amphibians, reptiles, birds, and mammals, to illustrate broad trends of evolution in endocrine systems. (Fall—day)
- 161 Entomology (3)** Munson  
Lecture (2 hours), laboratory (2 hours). Elementary morphology, physiology, and ecology of insects; introduction to taxonomy of more important groups. Material fee, \$8. (1967-68 and alternate years: fall—day)
- 162 Insect Physiology (3)** Munson  
Lectures and laboratory on physiology of insects. Admission by permission of instructor. Material fee, \$8. (1967-68 and alternate years: spring—day)
- 163 Human Physiology (3)** Douglas  
Introduction to the function of organ systems of the human body. Intended for nonbiology majors. (Fall—day)
- 164 Vertebrate Physiology (4)** Douglas  
Lecture (3 hours), laboratory (3 hours). Survey of the chemical and physical basis of function in vertebrate organ systems. Experiments with a variety of animals illustrate classical as well as modern approaches to animal physiology. Background in biology and chemistry strongly recommended. Material fee, \$11. (Spring—day)
- 165 Comparative Animal Physiology (3)** Douglas  
Introduction to study of the physiological basis of adaptation of animals to environments. Attention given to animals with ability to live under unusual or extreme environmental conditions. (Fall—evening)



**167 Radiation Biology (3)**

Schiff

Nature of radioactive particles and emissions; their effects on biological materials, chiefly at the cellular level; genetic effects of radiation. Recommended but not required: two years of biological sciences and chemistry or physics. (Fall—day)

**THIRD GROUP****204 Seminar: Invertebrate Zoology (3)**

Mortensen

Study of original publications on hormones of invertebrate animals. (1968–69 and alternate years: fall—evening)

**222 Seminar: Vertebrate Reproduction (3)**

Leach

Lectures and reports on the endocrinology of reproduction. Primary emphasis on recent literature and unsolved problems. (1967–68 and alternate years: spring—evening)

**224 Seminar: Comparative Endocrinology (3)**

Leach

Lectures and reports on endocrinology. Emphasis on recent literature and unsolved problems. (1968–69 and alternate years)

**245 Histochemistry (3)**

Desmond

Theory and application of chemical techniques in determining changes in the amount and distribution of inorganic and organic constituents of tissues during different physiological and pathological conditions. (Spring—day)

**247 Morphogenesis (3)**

Hansen

Lectures and reports on experimental morphology. Emphasis on early embryonic development. Prerequisite: Biological Sciences 104 or equivalent. (1968–69 and alternate years)

**250 Seminar: Regeneration (3)**

Hansen

Discussions and reports on theories and experimental evidence in both vertebrate and invertebrate animals. (1968–69 and alternate years)

**251 Seminar: Vertebrate Zoology (3)**

Desmond

Study of current publications in the field of histophysiology. (1967–68 and alternate years: fall—evening)

**253 Seminar: Animal Behavior (3)**

Schein

(Fall—evening)

**299–300 Thesis Research (3–3)**

Staff

(Academic year—as arranged; summer 1967)

**Biology****Botany**

See "Biological Sciences."



## **Business Administration\***

*Professors* J.L. Jessup, J.C. Dockeray, R.B. Eastin, R.F. Ericson, G.L. Lippitt, Charles Bradley

*Professorial Lecturers* S.N. Alexander, C.W. Clewlow, L.C. Collins, C.E. Houston, Robert Kaye, K.F. McClure, J.P. Murphy, J.N. Stonesifer, M.H. Schwartz, Tom Kouzes

*Associate Professors* J.F. McCarthy, Jr., J.H. Walters, Jr., H.R. Page (*Chairman*), H.C. Demoody, E.R. Magruder

*Associate Professorial Lecturers* C.M. Campbell, J.F. Doubleday, George Idelson, J.A. Morrow, Jerome Bracken

*Assistant Professors* G.F. Conner, P.D. Grub, R.A. Barrett, R.F. Hartley, J.R. Rizzo, J.R. Roman, Jr., John Norton, Elizabeth Adams

*Assistant Professorial Lecturers* R.J. Bond, J.F. Regan, Leslie This, J.E. Daly, Jr., G.R. Allen, Jr., J.H.H. Carrington, F.J. Girard, D.J. Weidman, W.G. Wells, Jr., G.J. Glassman, B.H. Gordon, R.M. Soland, J.W. Clark, Clifford Longest

*Lecturers* M.M. Dietch, Jr., C.R. Julian, T.M. Ryan

*Bachelor of Business Administration with a major in Business Administration or International Business.*—See pages 112–14, 115–19, 119–20.

*Master of Business Administration in the fields of Business Administration, International Business, or Personnel Administration.*—See pages 121–24, 127–28.

*Doctor of Business Administration.*—See pages 131–33.

## **BUSINESS ADMINISTRATION**

### **FIRST GROUP**

#### **51 Introduction to Business (3)**

Conner

The business environment; its effects upon the decision-making process. (Fall—day and evening; spring—day; summer 1967)

### **SECOND GROUP**

#### **102 Fundamentals of Management (3)**

Conner

Planning, organizing, directing, coordinating, and controlling activities of the administrative unit; evolution of management thinking. (Fall and spring—day and evening; summer 1967)

#### **105 Personnel Management (3)**

Eastin, Stonesifer

The labor force and labor markets. Industrial personnel and manpower programs, organizations and policy in personnel activities. (Fall—day; spring—evening; summer 1967)

#### **106 Problems in Personnel Management (3)**

Eastin, Stonesifer

Principles and problems of personnel management and industrial relations illustrated by cases drawn from industry and government. Prerequisite: Business Administration 105. (Fall—evening; spring—day)

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



**107 Collective Bargaining (3)**

Characteristics of American unionism and collective bargaining; economic, social, and public policy considerations. Management's role in the negotiation and administration of collective bargaining agreements. (Fall—evening)

**109 Office Management (3)**

Dietch

Organization and management of the office, office and information systems, planning and execution of work, systems analysis, supervision problems. (Fall and spring—evening)

**113 Real Estate (3)**

Doubleday

Fundamentals of real estate practice; leasing and property management; valuation, financing, and taxation. (Fall—evening)

**118 Introduction to Data Processing (3)**

Demoody

Basic principles and methods of data processing. Introduction to fundamentals, potentials, and problems of automatic data processing for management information systems. (Fall—day; summer 1967)

**119 Data Processing Programming (3)**

McCarthy

Basic principles and methods of computer programming. Introduction to computer programming concepts; form and character of instructions and programming schema for leading types of digital electronic computers. Prerequisite: Business Administration 118 or permission of instructor. (Spring—evening)

**120 Data Processing Systems (3)**

Adams

Basic principles and methods of data systems analysis, design, and implementation. Emphasis on relationship between equipment systems and management information systems. Prerequisite: Business Administration 118 or permission of instructor. (Spring—day)

**121 Fundamentals of Insurance (3)**

Doubleday

*(Formerly Property and Casualty Insurance)*

A general course in underlying principles of property, life, marine, and casualty insurance, and the function of insurance in the economic life of a business or individual. (Fall—evening)

**122 Life Insurance and Estate Planning (3)**

Life insurance contracts, their use in providing protection and estate development. (Spring—evening)

**131 Business Finance (3)**

Page, Roman

Basic principles involved in the financing of business enterprises. Prerequisite: Accounting 1-2. (Fall—day; spring—day and evening; summer 1967)

**132 International Business Finance (3)**

Introduction to principles, problems, practices, and institutions of international finance. Emphasis on documents and procedures used in international transactions, international financial markets, rates of exchange and balance of payments, and interregional and international aspects of foreign exchange. (Fall—evening)



**136 Credit Management (3)**

Types and sources of credit information, credit relationships from the standpoint of the commercial bank and the commercial business enterprise. Prerequisite: Accounting 1-2. (Spring—evening)

**138 Investments (3)**

Dockeray

Analysis of factors of investment credit with application to different types of investments, proper selection of investments for various classes of investors, regulation. Prerequisite: Accounting 1-2, Business Administration 131. (Spring—evening)

**141 Basic Marketing Management (3)**

Walters

Introduction to marketing and marketing management in relation to our total economy and business management, consumer and demand analysis, retailing, wholesaling, major marketing management problems and policies with particular emphasis on major decision areas and tools. Prerequisite: Economics 1-2. (Fall—evening; spring—day; summer 1967)

**143 Marketing Research (3)**

Hartley

Principles and practices of marketing research with particular emphasis on basic methods and techniques, sources and interpretation of data, and presentation of results. (Fall—evening)

**144 International Marketing Management (3)**

Introductory course; analysis of the international marketing position of the United States, channels for international marketing, international advertising media, legal aspects of international marketing, methods of preparing foreign market surveys, development of policies. (Fall—evening)

**145 Sales Management (3)**

Hartley

Organization of sales department, sales planning and forecasting, quotas, territories, performance standards, and analysis and control of distribution costs. Prerequisite: Business Administration 141. (Spring—evening)

**147 Advertising (3)**

Idelson

Advertising as a function of marketing and merchandising; uses and limitations of advertising as a tool of management; fundamentals involved in getting a finished advertisement before potential customers; evaluation, criticism, and control of advertising. (Spring—evening)

**158 Physical Distribution Management (3)**

Distribution from shipper's point of view: problems of plant location, inventory control, warehousing; traffic management emphasized, including private carriage. (Spring—evening)

**161 Commercial Law: Contracts, Sales, Agency, and Bailments (3)**

Collins, McClure

(Fall—day and evening)

**162 Commercial Law: Negotiable Instruments, Property, Mortgages (3)**

Collins, Murphy

(Spring—day and evening)

**163 Law in Relation to the Form of Business Units: Corporations, Partnerships, and Trusts (3)**

Murphy

(Fall—evening)



- 171 Principles of Transportation (3)** Roman  
Impact of intercity transportation systems on society. Emphasis on modal differences in development, economic characteristics, and regulation. (Fall—evening)
- 172 Public Utilities (3)** Roman  
Legal and economic meaning of public utility concept; development, services, economic characteristics, rate making, and regulation of utility industries, with emphasis on electric, gas, and telephone industries. (Spring—evening)
- 173 Transportation Systems Management (3)** Roman  
Comparative study, from the standpoint of various carrier modes, of management problems common to all modes of domestic and international transportation. (Not offered 1967-68)
- 174 Urban Transportation (3)** Roman  
Problems of developing balanced transportation systems for urban areas—area needs, modal evaluation, cost effectiveness, finance, and marketing. (Fall—evening)
- 175 Introduction to Foreign Trade (3)** Kaye  
Terminology, trade usages and practices, conditions essential to successful trading, economic bases of international trade, obstacles to trade, tariffs, impact of governmental controls on private trade. Prerequisite: Economics 1-2. (Fall and spring—evening)
- 176 International Business Theory and Policy (3)** Kaye  
Causal relationships underlying international business transactions, role of government in international trade, international agreements between private producers, trade with developing nations, developing international business policy. (Spring—evening)
- 177 Foreign Markets (3)** Grub  
Patterns of world trade by countries and commodities, selected regional analysis, and in-depth market studies. Prerequisite: Business Administration 144 and 175 or permission of the instructor. (Spring—evening)
- 178 Management of International Business Operations (3)** Grub  
Analysis of overseas projects according to purpose and type of organization; case studies involving development and management of overseas marketing programs and other operations in different world areas. (Spring—evening)
- 181 Manufacturing Production (3)** Clark, Page  
Basic principles and methods of manufacturing production. Manufacturing facilities, plant and equipment. Illustrations selected from various process and fabrication industries. (Spring—evening)
- 191 Business Reports and Analyses (3)**  
Sources of management information, array and analysis of data, interpretation and presentation of findings. (Fall—evening; spring—day; summer 1967)



- 193 **Management Communication** (3) Eastin  
Survey of communication problems; written communication; style and format; oral communication; oral briefing and presentation; group leadership; rapid reading; completed staff work; related subjects. (Spring—day)

- 195 **Controllership** (3) Regan  
Duties and responsibilities of the controller in a business organization; relations of controller to other departments and regulatory bodies; the controller's relation to price setting and inventories, depreciation policies, internal auditing, expense control and budgeting; financial reports to management, stockholders, and employees. Prerequisite: Accounting 1-2. (Fall—evening)

- 198 **Case Problems in Management** (3) Eastin, Page  
Principles and techniques of management illustrated by cases drawn from business and industry. Prerequisite: Business Administration 102, 105, 131, 141. (Fall and spring—day and evening)

### THIRD GROUP

- 208 **Personnel Management and Industrial Relations** (3) Barrett  
(Formerly Business Administration 211)  
Survey of personnel management practices and procedures, including labor-management relations. (Fall—day; spring—evening)

- 209 **Seminar: Personnel Management** (3) Eastin  
Discussion of industrial personnel and manpower management, and research in advanced problems. (Fall—evening; summer 1967)

- 210 **The Personnel Manager** (3) Jessup  
The personnel manager and his place in the organization, relations of personnel manager to other executives, personnel manager's policy role and relations with chief executive. Key problems of the senior personnel executive. (Spring—evening)

- 212 **Unionism and Collective Bargaining** (3)  
The American labor movement. Collective bargaining and the conduct of labor relations under collective bargaining agreements. (Fall—evening)

- 213 **Current Issues in Unionism, Collective Bargaining, and Labor Relations** (3)  
Current problems and issues. (Spring—evening)

- 231 **Corporate Financial Problems** (3) Dockeray, Houston  
Financial practice in promotion, consolidation, and mergers; capital structure adjustments; and reorganization. (Fall—evening)

- 232 **Seminar: Business Finance** (3) Dockeray, Houston  
Research in advanced financial problems. (Spring—evening; summer 1967)

- 233 **Seminar: International Business Finance** (3)  
Problems in international business finance; role of foreign trade and business investment in economic development. (Spring—evening)



- 235 Financial Management (3)**  
 Limited to students in the Air Force Advanced Management and the Navy Graduate Financial Management programs. (Fall and spring—as arranged)
- 237 Investment Analysis (3)** Dockeraey  
 Advanced course in applications of investment principles and analytical techniques to the selection of investments. Prerequisite: Business Administration 138. (Fall—evening)
- 238 Seminar: Investments (3)** Dockeraey  
 Research in investment problems, techniques of selection and the management of various types of funds. Prerequisite: Business Administration 138. (Spring—evening)
- 241 Advanced Marketing Management (3)** Walters, Hartley  
 Marketing management problems and policies in major decision areas of product planning, channels of distribution, advertising, personal selling, sales promotion, pricing, and development of integrated marketing programs. Tools useful in decision making. Case analysis. (Fall and spring—evening; summer 1967)
- 242 Seminar: Marketing Theory (3)** Hartley  
 Critical review of the development of marketing thought and important marketing literature. Special and current problems and/or trends in marketing and their impact on the firm and society. Prerequisite: Business Administration 241. (Spring—evening)
- 243 Seminar: Marketing Research (3)** Hartley  
 Research as an aid to decision making and increased efficiency in marketing, marketing research process, critical appraisal of methods and results, applications of marketing research. Cases, selected readings, and research projects. Prerequisite: a course in basic statistics. (Spring—evening)
- 246 Consumer Behavior (3)** Hartley  
 Consumer decision making in the market place; research in pertinent interdisciplinary studies in psychology, sociology, and other behavioral fields; present and potential applications for marketing. (Fall—evening)
- 247 Advertising Management (3)** Walters  
 Case studies and text material dealing with executive determination of advertising organization, basic strategy relative to marketing program, promotional program, advertising appropriation, preparation and scheduling of advertisements, media selection, and determination of effectiveness. Advertising research and economic and social aspects. (Fall—evening)
- 248 International Marketing (3)** Walters  
 Organization for international marketing, foreign demand analysis, product development and policies, marketing structure and trade channels, advertising and promotion problems and policies, pricing, credits and collections, and legal aspects. Particular emphasis on development of effective international marketing strategy. (Fall—evening)
- 249 Seminar: Comparative Marketing (3)** Walters  
 Designed as part of the theoretical foundation for advanced work in international business. Evaluation of domestic marketing systems of different countries with particular attention to the manner in which economic and



social forces create similarities and differences in performance of the marketing function. Marketing in Western Europe, Latin America, the socialist bloc, and selected underdeveloped areas of Africa and Asia. (Spring—evening)

### 250 Procurement and Contracting (3)

Business and governmental procurement and contract management. (Fall—evening)

### 251 Retail Management (3)

Managerial problems and policies concerning financing, location, organization structure, merchandise policies, advertising and sales promotion, personnel management, operating and service policies, accounting and control, and other related retail management problems. Case analysis. (Fall—evening)

### 253 Distribution Logistics (3)

Application of the systems concept to problems of physical distribution and supply of goods. Role of logistics in the economy and the business firm, transportation rates and services, location theory and problems, customer service standards pricing, inventory control, information flow, scheduling, allocation, warehousing, traffic, and logistics system organization. (Not offered 1967-68)

Walters

### 255 Seminar: International Trade I (3)

Research, analysis, and discussion of public and private foreign trade institutions; principles and theories of international trade; role of foreign trade and investment on U. S. balance of payments; problems and changing patterns in U. S. trade in the Western Hemisphere. (Fall—evening)

Grub

### 256 Seminar: International Trade II (3)

Research, analysis, and discussion of international problems arising from economic integration; emphasis on European Economic Community; U. S. trade with developing nations; East-West trade problems and potential; foreign trade policy of the United States. (Spring—evening)

Grub

### 257 Operation of the Multinational Firm (3)

Analysis and discussion of problems in international business by use of the case method, including international market entry and expansion; operating policies, procedures, and problems of multinational companies; developing executives for international business. (Spring—evening)

Grub

### 258 Colloquium in International Business (3)

Primarily for doctoral students. Research on selected problems in international business with emphasis upon national and international policies regarding regionalism, trade barriers, investment incentives, international organization, foreign aid and development assistance and its relation to trade with developing nations, and trade with the Communist Bloc. (Fall—evening)

Walters, Grub

### 261 Business Economics I (3)

Applications in economic analysis. Uses economic theory and statistics for establishment of criteria for business decisions involving policies on profits, prices, production, investments, and inventories. Prerequisite: Economics 217, Business and Public Administration 203, and Statistics 111, 112; or equivalent; or consent of instructor. (Fall—evening)

Bradley



- 262 Business Economics II (3)** Bradley  
Utilizes statistical techniques and aggregate economics for appraising economic forecasts and making business forecasts. Prerequisite: Economics 218, Business and Public Administration 203, and Statistics 111, 112; or the equivalent; or consent of instructor. (Spring—evening)
- 265 Business Economics III: Advanced Topics (3)**  
Primarily for doctoral candidates. Case studies and problems in use of economic statistics, operations analysis, and other developing techniques in mathematics applied to empirical business decisions. Prerequisite: Business Administration 261 and 262, or consent of instructor. (Not offered 1967-68)
- 269 Readings and Conferences in Controllership (2 or 3)**  
Limited to students in the Navy Graduate Financial Management Program. (Spring—as arranged)
- 273 Readings in Business (3)**  
Advanced readings in the fields of finance, marketing, and personnel management. Admission by permission of instructor; may be repeated once for credit. (Fall and spring—evening; summer 1967)
- 275 Seminar: Transportation (3)**  
Problems and special areas of interest in transportation. Prerequisite: Business Administration 171 or permission of instructor. (Spring—evening)
- 284 Readings and Conferences in Management (2)**  
Limited to students in the Air Force Advanced Management Program. (Fall—as arranged)
- 286 Management in the Armed Forces (3)** Jessup  
Special problems of military organization and management; applicability of business management techniques to the armed forces. (Not offered 1967-68)
- 290 Research Seminar: Management (3)**  
Limited to students in the Navy Graduate Financial Management Program. (Spring—as arranged)
- 291 Seminar: Business Management (3)** Eastin  
Research on various phases of management as practiced in American industry. (Fall and spring—evening)
- 293 Business Research (3)**  
May be repeated once for credit. (Fall and spring—evening)
- 296 Seminar: Controllership (3)** Kouzes  
Advanced problems of financial management. (Spring—evening)
- 297 Case Studies in Business Administration (3)** Jessup  
Problems of management analyzed with the view of developing a practical solution; cases used to show problems in marketing, industrial management, finance, etc. (Fall and spring—evening)



**299 Thesis Seminar (3)**

Grub

Examination of thesis standards, research philosophy and methodology. (Fall and spring—evening; summer 1967)

**300 Thesis Research (3)**

(Fall and spring—as arranged; summer 1967)

**FOURTH GROUP****398 Advanced Reading and Research (arr.)**

Staff

Limited to students preparing for the Doctor of Business Administration general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

**399 Dissertation Research (arr.)**

Staff

Limited to Doctor of Business Administration candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

**BUSINESS AND PUBLIC ADMINISTRATION****THIRD GROUP****201 Advanced Administrative Management (3)** Eastin, Stromsem, Brown

Advanced course in administration emphasizing principles and practices common to administrative units of all kinds. (Fall and spring—day and evening; summer 1967)

**203 Mathematics for Management (0)**

Bradley, Norton

Mathematical background for quantitative techniques employed in the solution of management problems. Basic analytical geometry, functions, elements of differential and integral calculus, difference equations, probability. Prerequisite to Business Administration 261, 262, and Business and Public Administration 204. No academic credit. Tuition fee, \$171. (Fall—day; spring—evening)

**204 Quantitative Factors in Administration (3)**

Bradley, Norton

Introduction to the spectrum of quantitative techniques useful in the solution of management problems. Potentials and limitations of mathematical models and proper areas for their application. Topics include statistical decision theory; linear programming; waiting line, inventory replacement models. Prerequisite: Business and Public Administration 203 or equivalent. (Fall and spring—day and evening)

**207 Human Behavior in Organizations (3)**

Lippitt, Pollock, Rizzo

(Formerly *Human Factors in Administration*)

Individual, group, intergroup, and other human behavior and development; application of social science research to administration. Practical applications emphasized. (Fall and spring—day and evening; summer 1967)

**208 Current Issues in Organizational Behavior (3)**

Lippitt, Rizzo

Study of behavioral factors relating to issues such as automation, ethics, labor-management relations, and similar problems. Problems in behavioral science research. Prerequisite: Business and Public Administration 207. (Fall and spring—evening)



- 209 **Colloquium in Behavioral Sciences (3)** Lippitt  
Primarily for doctoral students. Supervised study in depth and field projects in the behavioral sciences. Prerequisite: Business and Public Administration 207 or permission of instructor. (Fall—evening)
- 210 **Behavioral Factors in the Process of Change (3)** Lippitt  
(Formerly Psychology 262 *Behavioral Factors in Social Change*)  
Current research and theory related to the process of change. Basic principles of planned change; individual, group, organization, community, and cultural change. Human behavior research related to the change process emphasized. Prerequisite: Business and Public Administration 207 and 208. (Spring—evening)
- 211 **Leadership and Executive Performance (3)** Rizzo  
Theories of managerial leadership; issues and problems associated with leadership in large organizations and at higher management levels; executive selection and development. Not open for credit to students who have taken former Business Administration 288. (Spring—evening)
- 218 **Survey of Data Processing (3)** McCarthy, Daly  
Modern data processing systems; emphasis on management problems associated with the installation and use of such systems. (Fall and spring—evening)
- 219 **Digital Computer Programming Concepts (3)** McCarthy, Schwartz  
Machine functions and programmed control, instructions and programs, sub-routines, general purpose programming, business oriented programming languages. Prerequisite: Business and Public Administration 204 or permission of instructor. (Fall—evening)
- 220 **Comparative Digital Computer Systems and Their Management (3)** McCarthy, Schwartz  
Properties and capacities of the range of data processing equipments in use today, special purpose equipments in business, recent and prospective equipment developments. Fundamentals of data processing installation management. Prerequisite: Business and Public Administration 218 or 219, or permission of instructor. (Spring—evening)
- 221 **Management Information Systems Development and Application (3)** McCarthy, Schwartz  
Analysis and design of management information systems, integration of data processing in operations of government or business, impact on management organization and decision making. Prerequisite: Business and Public Administration 218 or 219, or permission of instructor. (Fall—evening; summer 1967)
- 222 **Seminar: Advanced Digital Computer Concepts (3)** Alexander  
Study of advanced problems in the design and application of computer systems. (Spring—evening)
- 223 **Management of a Data Processing Organization (3)** Adams  
Organization and management of data processing function in business and government; study of types of resources required; planning, scheduling, and production of data processing workloads; performance standards; evaluation criteria. Prerequisite: Business and Public Administration 218 and either 219 or 220. (1968-69 and alternate years)



**227 Mathematical Programming: Techniques and Applications (3)**

Bradley, Bracken

Technical and management considerations of linear and nonlinear programming. Mathematical and computational aspects of linear programming. Formulation of linear programming models. Studies of applications of linear programming. Introduction to theory and application of nonlinear programming. Prerequisite: Business and Public Administration 204. (Fall—evening)

**228 Applications of Operations Research (3)**

Bradley, Bracken

Applications of operations research in a number of management problem areas in government and business. Critical review of areas where model-building is promising and areas not amenable to operations research techniques. Student formulation of models. Prerequisite: Business and Public Administration 204. (Spring—evening)

**229 Seminar: Operations Research (3)**

Bracken

Primarily for doctoral students. Supervised study in depth of contemporary literature and advanced projects in operations research. (Spring—evening)

**262 Contemporary Administrative Theory and Practice (3)**

Ericson

An overview of current and prospective theory and practice from an inter- and trans-disciplinary viewpoint. Topics addressed include: general systems theory, game theory, axiology and management values, antithetics, value engineering, cybernetic systems, decision theory, innovation and creativity models, and general semantics. (Fall and spring—evening)

**268 Management Engineering (3)**

Clewlow

Analysis of the techniques for initiation and implementation of management engineering programs; emphasis on organization and methods surveys including the study of work measurement, work simplification, management audits, and other management improvement programs. Not open to students who have taken Business and Public Administration 269. (Fall and spring—evening; summer 1967)

**269 Management and Information Systems (3)**

Page

Survey of collection and processing of management information, management engineering, work simplification, development of methods, procedures, and systems; systems analysis. Not open to students who have taken Business and Public Administration 268. (Fall and spring—day)

**287 Relations of Government to Business (3)**

Timbers

Activities of government in relation to business management in areas of labor relations, wages, production, and prices. Trend and change in economic activity and its bearing upon government policy. (Spring—evening; summer 1967)



## Chemistry\*

Professors B.D. Van Evera, S.N. Wrenn, C.R. Naeser (*Chairman*), R.C. Vincent, R.E. Wood, T.P. Perros, William Schmidt, D.G. White, J.B. Levy

Associate Professor Nicolae Filipescu

Associate Professorial Lecturer Abraham Schwebel

Assistant Professors Bette Barton, F.L. Minn, A.D. Britt, E.A. Caress

**Registration.**—Before completing registration each student must obtain from the representative of the Department an assignment to lecture, recitation, and laboratory sections. The work of the junior and senior years must be approved by the Department.

**Bachelor of Arts or Bachelor of Science with a major in Chemistry (Departmental).**—The Department offers two undergraduate majors designed to give students broad training in the basic divisions of chemistry: analytical, inorganic, organic, and physical chemistry. *Major I*, although providing for considerable concentration in chemistry, permits a wider selection of electives, and thus should meet the needs of students preparing to enter medicine, dentistry, or related fields. *Major II* is intended primarily for students preparing for graduate study in chemistry or those planning to enter the chemical profession and wishing to be certified to the American Chemical Society as having met the minimum requirements for professional training. Both majors require the passing of the major examination at the end of the senior year. The correlated knowledge upon which the student will be examined includes the four divisions of chemistry named above. Two foreign languages are recommended for students planning to do graduate work in chemistry.

**Prerequisite:** the Arts and Letters or the Science curriculum, respectively, pages 63–64, including Chemistry 11–12 or 15–16, 22, 51–52; Mathematics 22; Physics 1, 2 or 30, 51–52.

**Major I**—required: the general requirements, pages 69–73, including Chemistry 111, 112, 113, 116, 122, 134, and 135 or 155 (two semester hours).

**Major II**—required: the general requirements, pages 69–73, including the German language, all requirements of Major I, plus Chemistry 153 or 155, 235; Mathematics 23; and one course selected from Chemistry 207, 213, 221, 222, 251, Mathematics 111, 139, Physics 163, 167–68, 175. The student is encouraged to take Mathematics 24 and Physics 31–32 in preparation for advanced courses and graduate work. These courses are essential to graduate work in theoretical chemistry.

**Master of Science in the field of Chemistry.**—**Prerequisite:** a Bachelor's degree with a major in Chemistry from this University, or equivalent.

**Required:** the general requirements, pages 77–79. The required thirty semester hours of graduate work must include Chemistry 213 and 221, and at least two of the following: Chemistry 207, 236, and 251. In each of these five courses, a qualifying examination is given during the first week of classes; these examinations are part of the prerequisite for these and other advanced courses. Deficiencies, if any, shall be eliminated by assignment to appropriate second-group courses for which a limited amount of graduate credit may, upon petition, be granted for courses normally taken by seniors. In addition to the above, Chemistry 193, 299–300, and at least four semester hours of advanced laboratory work are also required. Courses which may be taken to satisfy this laboratory requirement are Chemistry 221 and 222 (one semester hour of laboratory each), 135, 136, 155, and 156. A maximum of two semester hours of Chemistry 295 may also be applied to the laboratory requirement. Chemistry 156 is prerequisite to Master's thesis work in the field of organic chemistry. All graduate students are required to participate in the seminar program. A reading knowledge examination in French, German, or Russian (German or Russian preferred) must be passed before the second half of the work is started. A student who

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



intends to become a doctoral candidate is strongly urged to take Chemistry 207 as early as possible in his graduate program.

*Master of Science in the field of Geochemistry (an interdepartmental degree offered by the departments of Chemistry and Geology).—Prerequisite: a Bachelor's degree with a major in Chemistry or in Geology from this University or equivalent.*

Required: the general requirements, pages 77–79, including Chemistry 111, 112; Geology 141, 241, 249; and Chemistry 213 or Geology 245. The Master's Comprehensive Examination must be taken before registration for the second half of the thesis work. A reading knowledge examination in German or Russian must be passed before the second half of the work is started.

*Doctor of Philosophy fields of study in Chemistry: Chemistry of Natural Products, Inorganic Chemistry, Organic Chemistry, Physical Chemistry (Electrochemistry, Kinetics, Magnetic Resonance, Solubilities, Theoretical), and Physical Organic Chemistry—Reaction Mechanisms.—See pages 77–78, 79–80 for requirements for the degree.*

*Doctor of Philosophy field of study in Geochemistry (an interdepartmental field offered by the departments of Chemistry and Geology).—See pages 77–78, 79–80 for requirements for the degree.*

*Bachelor of Arts in Education with a teaching field in Chemistry.—Prerequisite: the Education curriculum, pages 65–66.*

Required: the Chemistry option and professional courses listed on pages 96–97.

#### FIRST GROUP

##### 3–4 Fundamentals of Physical Science (4–4)

Van Evera, Barton

A year course: credit given on completion of Chemistry 4. Lecture (3 hours), laboratory (3 hours). Selected topics from chemistry, physics, astronomy, and geology are integrated to introduce the nonscience major to the basic methods and achievements of physical science. Laboratory fee, \$11 a semester. (Academic year—day)

##### 11–12 General Chemistry (4–4)

Staff

A year course: credit given on completion of Chemistry 12. Lecture (3 hours), laboratory (3 hours), recitation (1 hour). Elementary course in general chemistry, including qualitative analysis. Prerequisite: one year of high school algebra. Laboratory fee, \$18 a semester. (First half and second half: fall and spring—day and evening; summer 1967)

##### 15–16 Intensive General Chemistry (4–4)

Lecture (3 hours), laboratory (3 hours), recitation (1 hour). Prerequisite: high school chemistry and high school physics, including laboratory work. Admission by Departmental placement examination given prior to registration or on the basis of the College Board Advanced Placement Examination of the Educational Testing Service. Laboratory fee, \$13 a semester. (Academic year—day)

##### 22 Elementary Quantitative Analysis (4)

Vincent

Lecture (2 hours), laboratory (6 hours). Theory and practice of quantitative analysis by classical volumetric and gravimetric methods and introduction to instrumental analysis. Prerequisite: Chemistry 12 or 16. Laboratory fee, \$18. (Fall—day; spring—day and evening; summer 1967)

##### 50 Introduction to Organic Chemistry (4)

Caress

Lecture (3 hours), laboratory (3 hours). A terminal course for students in related disciplines. This course does not fulfill the organic chemistry requirement for chemistry majors or premedical students. Prerequisite: Chemistry 11–12 or 16. Laboratory fee, \$12. (Fall—day)



**51-52 Organic Chemistry (4-5)**

Levy, Caress

A year course: credit given on completion of Chemistry 52. Chemistry of the compounds of carbon. Prerequisite: Chemistry 12 or 16. Laboratory fee: Chemistry 51, \$12; Chemistry 52, \$20. (*First half*: fall—lecture (3 hours), laboratory (3 hours), day and evening; summer 1967. *Second half*: spring—lecture (3 hours), laboratory (6 hours), day and evening; summer 1967.)

**SECOND GROUP****111 Physical Chemistry (3)**

Wood

Gas Laws, chemical thermodynamics, solution chemistry, chemical equilibria, and other topics. Prerequisite: Chemistry 22; Mathematics 22; Physics 1, 2. (Fall—day and evening; summer 1967)

**112 Physical Chemistry (3)**

Wood

Chemical kinetics, chemical statistics, electrochemistry, and other topics. Prerequisite: Chemistry 111. (Spring—day and evening; summer 1967)

**113 Physical Chemistry Laboratory (2)**

Minn

Laboratory complement of Chemistry 111; previous satisfactory completion of or concurrent registration for Chemistry 111 required. Laboratory fee, \$18. (Fall—day and evening)

**116 Physicochemical Measurements (3)**

Staff

Integrated laboratory work associated with Chemistry 112 and 122; principles and applications of physicochemical methods and instruments to problems in chemical thermodynamics and kinetics and in structural and analytical chemistry. Prerequisite: Chemistry 111, 113. Prerequisite or concurrent registration: Chemistry 112, 122. Laboratory fee, \$18. (Spring—day and evening)

**122 Instrumental Analysis Lectures (2)**

Schmidt

Theory of instrumental methods in qualitative and quantitative analysis, determination of structure, and study of reaction mechanisms with emphasis on electroanalysis, spectrophotometry, and chromatography. Correlated with Chemistry 116. Prerequisite or concurrent registration: Chemistry 112. (Spring—day and evening)

**134 Descriptive Inorganic Chemistry (3)**

Naeser

Intermediate level course emphasizing the descriptive chemistry of the elements. Prerequisite: Chemistry 22, 52. Prerequisite or concurrent registration: Chemistry 111. (Fall—day)

**135-36 Inorganic Chemistry: Preparations (2-2)**

Perros

Application of the technique of inorganic chemistry to the preparation and purification of a list of selected substances. Prerequisite: Chemistry 52. Prerequisite or concurrent registration: Chemistry 134. Laboratory fee, \$18 a semester. (*First half*: fall—evening; spring—day. *Second half*: fall—evening)

**153 Special Laboratory in Organic Chemistry (1)**

Wrenn

Designed to give the chemistry major additional and broader training in the technique of organic chemistry than is obtained in Chemistry 51-52.



Prerequisite or concurrent registration: Chemistry 22, 52. Laboratory fee, \$12. (Chemistry 155 may be substituted for this course.) (Spring—day and evening)

### 155 Organic Chemistry: Preparations (2 or 3)

Wrenn

Synthesis of organic compounds and application of the technique of organic chemistry to the preparation of pure compounds, using larger amounts and greater refinements than in Chemistry 51–52. Prerequisite: Chemistry 22, 52. Laboratory fee, \$10.50 a semester hour. (Spring—evening)

### 156 Qualitative Organic Analysis (3)

Wrenn

Lecture (1 hour), laboratory (6 hours). Identification of pure organic compounds, separation of mixtures, and identification of their components. Required of all students planning thesis work in organic chemistry. Prerequisite: Chemistry 22, 52. Laboratory fee, \$18. (Fall—evening)

### 191 History of Chemistry (2)

Perros

Historical development of chemistry. Prerequisite: Chemistry 22, 52. (1967–68 and alternate years: fall—evening)

### 193 Chemical Literature (1)

Wrenn

A general course; reference work and reports. Prerequisite: Chemistry 22, 52. Prerequisite or concurrent registration: Chemistry 111. (Fall—evening)

## THIRD GROUP

### 203 Chemical Kinetics (2)

Levy

Rates of chemical reactions and factors influencing them. Prerequisite: Chemistry 52, 112. (1967–68 and alternate years: spring—evening)

### 207 Chemical Bonding (3)

Barton

Application of quantum mechanics to modern chemical problems, with emphasis on molecular orbital and valence bond approximations; group theory. Prerequisite: grade of *A* or *B* in Chemistry 111–12 or in 211–12 or qualifying grade in physical chemistry qualifying examination. (Fall—day)

### 211–12 Physical Chemistry (2–1)

Wood

Same as Chemistry 111 and 112. Admission only by departmental permission. Credit assigned only upon satisfactory completion of Chemistry 213. (Academic year—day and evening)

### 213 Chemical Thermodynamics (3)

Wood

Application of thermodynamics to chemical problems. Thermochemistry, homogeneous and heterogeneous equilibria, statistical calculation of thermodynamic properties, electrochemistry. Prerequisite: grade of *A* or *B* in Chemistry 111–12 or in 211–12 or qualifying grade in physical chemistry qualifying examination. (Fall—evening)

### 214 Principles of Magnetic Resonance (3)

Barton

Application of magnetic resonance to chemical problems with emphasis on the close connection between theory and experiment. Reaction rates, bond-



ing, electron densities, etc. Prerequisite: Chemistry 207 or permission of instructor. (1968-69 and alternate years)

**215 Quantum Chemistry (3) Minn**

Postulates of quantum mechanics, exactly solvable systems, variation and perturbation approximations, atomic and molecular structure and spectra, the chemical bond. Prerequisite: Chemistry 207 or permission of instructor. (1967-68 and alternate years: fall-evening)

**216 Statistical Mechanics as Applied to Chemistry (3) Barton**

Introduction to classical and quantum statistics designed to acquaint the student with basic principles and application of method. Prerequisite or concurrent registration: Chemistry 207 or permission of instructor. (1967-68 and alternate years: spring-evening)

**219 Spectrochemistry (3) Filipescu**

Energetic states of molecules under the influence of electromagnetic radiation and their relation to structures and spectroscopic properties. Prerequisite: Chemistry 207 and 221, or permission of instructor. (1967-68 and alternate years: spring-evening)

**\*221 Advanced Analytical Chemistry I (3) Britt**

Lecture (2 hours), laboratory (3 hours). Theory and application of recent spectrometric methods of analysis, including electrical, magnetic, and optical instrumentation. Prerequisite: Chemistry 122 and qualifying examination. (Spring-day)

**\*222 Advanced Analytical Chemistry II (2 or 3) Schmidt**

Lecture (2 hours), laboratory (3 hours—optional). Theory and application of electroanalysis and separations by physicochemical methods. Prerequisite: Chemistry 122 and qualifying examination. (1967-68 and alternate years: fall-evening)

**231 Coordination Chemistry (2) Perros**

Selected topics including application of ligand field theory and molecular orbital theory to transition metal complexes, determination of stability constants, and methods for the synthesis of representative coordination compounds. Prerequisite: Chemistry 236. (1967-68 and alternate years: spring-evening)

**232 The Lanthanide and Actinide Elements (2) Perros**

Comprehensive review of the physical and chemical properties of the lanthanide and actinide elements; particular emphasis on the more recent developments. Prerequisite: Chemistry 236. (1968-69 and alternate years)

**234 Radiochemistry (2) Schwebel**

Preparation, properties, and uses of radioactive isotopes, both natural and artificial. Prerequisite: Chemistry 235-36. (1968-69 and alternate years)

**\*235-36 Advanced Inorganic Chemistry (3-3) White**

Application of modern chemical theories to inorganic substances and reactions, followed by a detailed study, developed from the periodic table,

\*The appropriate qualifying examination is prerequisite to all "advanced" courses.



of the chemistry of the more common elements. Prerequisite: Chemistry 112, 116, or qualifying examination in inorganic chemistry. (Academic year—day)

**\*251-52 Advanced Organic Chemistry (3-3)**

Filipescu

Synthesis, reactions, and properties of organic compounds; fundamental theories of organic chemistry with emphasis on reaction mechanisms. Prerequisite: Chemistry 52, 112, and qualifying examination in organic chemistry. (Academic year—evening)

**\*253 Advanced Synthetic Organic Chemistry (3)**

Wrenn

Study of reactions employed in the synthesis of organic compounds. Prerequisite: Chemistry 251. (Spring—evening)

**257 Physical Organic Chemistry (2)**

Levy

Physical aspects of the reactions of organic compounds; effects of structure and medium on reactivity. Prerequisite: Chemistry 252 or permission of instructor. (1968-69 and alternate years)

**258 Natural Products (2)**

Caress

Methods of structure determination and synthesis of naturally occurring compounds; some aspects of the chemistry of terpenes, steroids, alkaloids, etc. Prerequisite: Chemistry 251-52 or consent of instructor. (1968-69 and alternate years)

**259 Polymer Chemistry (3)**

Filipescu

Preparation, properties, and structure of macromolecules. Prerequisite: Chemistry 52 and 112. (1967-68 and alternate years: fall—evening)

**291 Seminar: Recent Developments in Chemistry (0)**

Staff

All graduate students are required to participate in this seminar throughout their period of residence in the Department. No academic credit. No tuition fee required. (Fall and spring—day)

**295 Research (arr.)**

Staff

Research on problems approved by the Staff. Open to qualified students with advanced training. May be repeated once for credit. Laboratory fee, \$7.50 a semester hour. (Fall and spring—as arranged; summer 1967)

**299-300 Thesis Research (3-3)**

Staff

Laboratory fee, \$18 a semester. (Academic year—as arranged; summer 1967)

**FOURTH GROUP**

**398 Advanced Reading and Research (arr.)**

Staff

Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

**399 Dissertation Research (arr.)**

Staff

Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

\* The appropriate qualifying examination is prerequisite to all "advanced" courses.



## Chinese

See "Slavic and Oriental Languages and Literatures."

## Classical Languages and Literatures\*

Professor J.F. Latimer (Chairman)

Associate Professorial Lecturer A.B. Seidman

Assistant Professor Mary Norton

Assistant Professorial Lecturers Eleanor Clough, Mary Nutting

Lecturers D.B. Beers, Anne McCausland

*Bachelor of Arts with a major in Latin (Departmental).*—Prerequisite: the Arts and Letters curriculum, page 63, including History 39–40.

Required: in addition to the general requirements, pages 69–73, eighteen semester hours in Latin beyond first-group courses, Art 111, Philosophy 111. A reading knowledge of French or German, preferably both, is recommended.

*Bachelor of Arts with a major in Classical Archeology and Greek (Departmental).*—This interdepartmental major may be arranged in conjunction with the Department of Art. Prerequisite: the Arts and Letters curriculum, page 63, Greek 13–14 or 17–18, and History 39–40.

Required: in addition to the requirements, pages 69–73, twelve semester hours of second-group courses in Greek; Anthropology 183; Art 101, 102, 103, 111; History 109; Philosophy 111. A reading knowledge of French or German, preferably both, is strongly recommended.

Latin 1–2 and 3–4, or Greek 11–12 (or 17–18) and 13–14 satisfy the foreign language requirements, see page 62.

## LATIN AND GREEK

### FIRST GROUP

#### 1–2 First-year Latin (3–3)

Nutting and Staff

A year course: credit given on completion of Latin 2. Functional presentation of the essentials of the language, appropriate reading selections, development of English derivatives, introduction to Roman life and literature. (Academic year—day; summer 1967)

#### 3–4 Second-year Latin (3–3)

Nutting

A year course: credit given on completion of Latin 4. Continuation of Latin 1–2, emphasis on Latin readings that illustrate Roman life and literature. Prerequisite: Latin 1–2 or two years of high school Latin. (Academic year—day)

#### 11–12 First-year Greek (3–3)

Staff

A year course: credit given on completion of Greek 12. Essentials of grammar; appropriate reading selections. (Academic year—day)

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



- 13-14 Second-year Greek (3-3)** Staff  
A year course: credit given on completion of Greek 14. Review of grammar; rapid reading from selected Greek authors. Prerequisite: Greek 12. (Academic year—day)
- 17-18 Introduction to Homeric Greek (3-3)** Staff  
A year course: credit given on completion of Greek 18. Forms and syntax of Homeric Greek. Appropriate reading selections. (Summer 1967)
- 103 Roman Comedy (3)** Staff  
(Replaces *Classical Languages and Literatures* 103-4)  
Selected plays from Plautus and Terence. Prerequisite: Latin 115 or permission of instructor. (Not offered 1967-68)
- 106 Roman Elegiac Poetry (3)** Staff  
Selections from Propertius, Tibullus, Ovid. Prerequisite: Latin 116 or permission of instructor. (Not offered 1967-68)
- 111 Roman Historians (3)** Norton  
(*Classical Languages and Literatures* 111 and 112 replace former 111-12 *Roman History and Philosophy*)  
Selections from Sallust, Livy, and Tacitus. Prerequisite: Latin 112 or permission of instructor. (Not offered 1967-68)
- 112 Roman Philosophical Writings (3)** Norton  
(*Classical Languages and Literatures* 111 and 112 replace former 111-12 *Roman History and Philosophy*)  
Selections from Lucretius, Cicero, Seneca. Prerequisite: Latin 115 or permission of instructor. (Spring—day)
- 115 Caesar and Cicero (3)** Norton and Staff  
Selections from Caesar's *Civil War* and from correspondence between Caesar and Cicero and others dealing with the end of the Roman Republic. Prerequisite: Latin 4 or equivalent. (Fall—day)
- 116 Vergil's Eclogues and Georgics (3)** Norton and Staff  
Appropriate selections for rapid reading. Prerequisite: Latin 115 or permission of instructor. (Spring—day)
- 121 Latin Lyric Poetry (3)** Staff  
Selections from Catullus and Horace. Prerequisite: Latin 115. (Fall—day)
- 122 Roman Satire (3)** Staff  
Selections from Horace, Juvenal, and Martial. Prerequisite: Latin 112 or permission of instructor. (Not offered 1967-68)
- 131-32 Latin Prose Composition (1-1)** Norton  
Exercises in Latin prose composition for Latin majors. Other students may enroll by permission of instructor. (Academic year—day)
- 133-34 Medieval Latin Literature and Texts (3-3)** Andrews  
Wide variety of selections in prose and poetry for rapid reading. Prerequisite: Latin 115 or permission of instructor. May be taken for graduate credit with permission of instructor. (Academic year—day)



135-36 **Survey of Latin Literature** (3-3) Staff  
 Latin literature in historical sequence. For Latin majors. Other students by permission of instructor. (Not offered 1967-68)

141-42 **Greek Epic Poetry** (3-3) Staff  
*(Expansion of former Classical Languages and Literatures 107 Homer)*  
 Selections from Homer's *Iliad* and *Odyssey*, Hesiod's *Works and Days*, and Apollonius' *Argonautica*. Prerequisite: Greek 14 or 18. (Academic year—day)

143-44 **Greek Drama** (3-3) Latimer  
 Selected plays from Aeschylus, Sophocles, Euripides, Aristophanes, and Menander. Prerequisite: Greek 142 or permission of instructor. (Not offered 1967-68)

145-46 **Greek Historical Writings** (3-3) Staff  
*(Expansion of former Classical Languages and Literatures 108 Greek Historians)*  
 Selections from Herodotus, Thucydides, and Xenophon. Prerequisite: Greek 142 or permission of instructor. (Not offered 1967-68)

147-48 **Greek Philosophy and Oratory** (3-3) Staff  
 Selections from Plato, Aristotle, Lysias, Isocrates, and Demosthenes. Prerequisite: Greek 146 or permission of instructor. (Not offered 1967-68)

151-52 **Roman Epic Poetry** (3-3) Norton  
 Selections from Vergil's *Aeneid*, Ovid's *Metamorphoses*, and Lucan's *Pharsalia*. Prerequisite: Latin 116 or permission of instructor. (Not offered 1967-68)

## COURSES IN ENGLISH TRANSLATION

### FIRST GROUP

71 **Greek and Roman Epic Poetry** (3) Norton and Staff  
 Selections from Homer, Hesiod, Apollonius, Vergil, Ovid, and Lucan. (Fall—evening; spring—day)

72 **Greek and Roman Literature** (3) Norton and Staff  
 Selections from Greek drama, history, and philosophy. (Fall—day; spring—evening)

109 **Greek and Roman Tragedy** (2 to 3) Staff  
 Selections from Aeschylus, Sophocles, Euripides, and Seneca. (Summer 1967)

110 **Greek and Roman Comedy** (2 to 3) Staff  
 Selected plays of Aristophanes, Menander, Plautus, and Terence. (Summer 1967)

114 **Greek and Roman Satirical Writing** (2 to 3) Staff  
 Selections from Aesop, Archilochus, Aristophanes, Horace, Juvenal, Martial, Petronius, and Lucian. (Not offered 1967-68)



**124 Literary and Scientific Etymology (2 to 3)**

Staff

Derivation and formation of English words stemming from Greek and Latin. (Fall and spring—day and evening; summer 1967)

**CLASSICAL HEBREW**

Classical Hebrew does not satisfy the foreign language requirement for Columbian College of Arts and Sciences; see page 62.

**21-22 First-year Classical Hebrew (3-3)**

Seidman

A year course: credit given on completion of Hebrew 22. Fundamental principles of the language; practice in reading simple narrative prose. (Academic year—day)

**23-24 Second-year Classical Hebrew (3-3)**

Seidman

A year course: credit given on completion of Hebrew 24. Review of grammar and exegesis of passages from the Hebrew text of the Old Testament. (Academic year—day)

**Economics\***

*Professors* A.E. Burns, D.S. Watson, T.W. Holland (*Emeritus*), J.W. Kendrick, Wilson Schmidt, C.T. Stewart, Jr., C.E. Galbreath (*Chairman*), Joseph Aschheim, R.P. Sharkey, Michael Brewer, Murray Brown, T.F. Carroll (*Visiting*), Clarence Danhof, J.L. Knetsch (*Visiting*)

*Professorial Lecturers* Henry Solomon, John Hardt, S.I. Katz, Murray Ross  
*Associate Professors* Mary Holman, Ching-Yao Hsieh

*Associate Professorial Lecturers* S.E. Haber, Nat Simons, Jr., R.M. Field  
*Assistant Professors* S.J. Hunter, W.F.E. Long II, Henry Peskin, R.W. Rafuse, Jr., B.C. Field

*Assistant Professorial Lecturers* G.M. Lady, Edward Gramlich, J.M. Howell, J.N. Ellison

*Instructor* Margaret Reuss

*Bachelor of Arts with a major in Economics (Departmental).*—Prerequisite: the Arts and Letters curriculum, page 63, including Economics 1-2 and Statistics 51. A three-semester-hour college-level course in calculus is strongly recommended.

Required: the general requirements, pages 69-73, and (1) Economics 101, 102 (to be completed no later than the junior year), and 198; (2) Economics 121-22 or 161-62 or 181-82; (3) twelve additional hours of second-group Economics courses to be selected with the approval of the adviser; (4) Statistics 111, 112, or equivalent.

*Bachelor of Arts with a major in Latin American Civilization (Field-of-Study).*—See Department of History.

*Master of Arts in the field of Economics.*—Prerequisite: the degree of Bachelor of Arts with a major in Economics at this University, or equivalent.

Required: the general requirements, pages 77-79, including (1) Economics 210; (2) twelve additional semester hours in economic theory to include Economics 203-4, 205, and three semester hours to be selected from Economics 206, 215, 223, 261, 263-64; (3) nine semester hours of other third-group Economics courses; and (4) a thesis (Economics 299-300).

\* Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.



*Doctor of Philosophy fields of study in Economics: Development Economics, Econometrics, Economic History, Economic Policy, Economic Theory, History of Economic Thought, International Economics, International Finance, Labor Economics, Mathematical Economics, Money and Banking, National Income, Natural Resources Policy, Public Finance, and Soviet Economics.*—See pages 77–78, 79–80 for requirements for the degree.

*Doctor of Philosophy fields of study in International Relations* combine work in Economics, History, and Political Science.

*Bachelor of Arts with a major in International Affairs.*—See page 328.

*Bachelor of Arts with a major in Public Affairs (Economics Option).*—See page 328.

*Master of Arts in the field of International Affairs.*—See pages 328–29.

*Master of Arts in the field of Public Affairs with a specialization in Domestic Economics.*—See page 329.

### FIRST GROUP

#### \*1–2 Principles of Economics (3–3)

Staff

Lecture (2 hours), recitation (1 hour). Survey of the major economic principles, institutions, and problems in contemporary life. Economics 1 is prerequisite to Economics 2. (First half: fall and spring—day and evening; summer 1967. Second half: fall—evening; spring—day and evening; summer 1967.)

### SECOND GROUP

#### 101 Intermediate Microeconomic Theory (3)

Brown, Long

(Formerly *Economic Analysis*)

Analysis of supply, demand, and pricing. (Fall—day and evening; summer 1967)

#### 102 Intermediate Macroeconomic Theory (3)

Long, Simons

(Formerly *Economic Analysis*)

Theories of national income determination and growth. (Spring—day and evening; summer 1967)

#### 104 History of Economic Thought (3)

Hsieh

History of the major schools of economic thought, influence of changing problems on the development of economic theory. (Spring—day)

#### 105 Business Fluctuations and Forecasting (3)

Hunter

(Formerly *Business Cycles*)

Description and analysis of the facts of economic instability, survey of recent business cycle theory, forecasting, and consideration of counter-cyclical policies. (Fall—evening)

#### 121–22 Money and Banking (3–3)

Reuss

Theory of money, credit, and banking; commercial banking and the Federal Reserve System; other financial institutions; international aspects of money; current financial problems. (Academic year—day and evening; summer 1967—Economics 121)

#### 133 Economy of the Soviet Union (3)

Hardt

Development and main features of economic life in the Soviet Union. (Fall—day)

\* Economics 1–2 is prerequisite to all other courses in Economics.



- 134 Comparative Communist Economic Systems (3)** Hardt  
Analysis of economic development and performance of the Soviet Union and other Soviet-type economies. Institutional aspects and quantitative measures of performance. (Spring—day)
- 142 Labor Economics (3)** Haber  
Characteristics of American labor force, operations of labor markets, wage theories and practices, impact of collective bargaining, causes and characteristics of unemployment, public policies and programs. (Fall—day)
- \*147 Economic History of Europe (3)** Sharkey  
European economic development since the Middle Ages; emphasis on the period following the Industrial Revolution. Evolution of capitalism and its impact upon the societies of Europe. (Fall—day)
- 161-62 Public Finance (3-3)** Long, Rafuse  
Theoretical and institutional analysis of government expenditures, taxation, fiscal policy, and debt management. (Academic year—day)
- 165 Government and Business (3)** Stewart  
(Formerly *Economic Policy*)  
Survey of economic policies in the United States, economic philosophies, antitrust and other areas of regulation. (Fall—day)
- \*179-80 U. S. Economic History (3-3)** Sharkey  
Process of economic growth from Colonial times to the present. Development of various sectors in the economy—such as agriculture, transportation, manufacturing, and banking—and their interdependence. *First half*: 1607-1865. *Second half*: 1865 to present. (Academic year—evening)
- 181-82 International Economics (3-3)** Aschheim, Galbreath  
*First half*: fundamentals of the monetary theory and price theory of international trade. *Second half*: analysis of major contemporary problems including balance of payments, international liquidity, and economic development. (Academic year—day and evening; summer 1967—Economics 181)
- 185-86 Economic History and Problems of Latin America (3-3)** Howell  
Analysis of present structures and problems of Latin American economies. (Academic year—evening)
- 195 Governmental and Industrial Economics (3)** Ellison  
Limited to students in the Air Force Advanced Management Program and the Navy Graduate Financial Management Program. (Fall—as arranged; summer 1967)
- 198 Proseminar in Economics (3)** Hunter  
Independent reading in contemporary economic analysis, comprehensive re-examination of major economic principles and concepts, directed research and writing. Prerequisite: Economics 101, 102, and 121. (Fall and spring—as arranged)

\* Interdepartmental course offered by departments of Economics and History. Students register in either department.



**199 Independent Research in Economics (3)**

Staff

Under the personal direction of an instructor. Limited to Economics majors with demonstrated capacity. Prior approval of instructor required. (Fall and spring—as arranged)

**THIRD GROUP****201-2 History of Economic Thought (3-3)**

Burns

Critical analysis and interpretation of the development of economic theory from Aristotle through the 19th century. (Academic year—evening)

**203-4 Microeconomic Theory (3-3)**

Watson

(Formerly *Contemporary Price Theory*)

*First half:* theories of the consumer and of the firm. *Second half:* theories of markets. (Academic year—evening)

**205 Macroeconomic Theory (3)**

Kendrick

(Formerly *Theory of Employment and Income*)

Historical antecedents of contemporary macroeconomics. Theories of income determination and employment. Recent literature. (Fall—evening)

**206 Economic Growth and Fluctuations (3)**

Staff

Theories of economic growth and fluctuations in advanced countries. Recent literature. (Spring—evening)

**207 Business Cycle Analysis (3)**

Kendrick

(Formerly *Economics 206*)

Empirical analysis of American business cycles; evaluation of the methodology and findings of the National Bureau of Economic Research. Statistical tests of theories of the business cycle. (Spring—evening)

**208 National Income (3)**

Kendrick

Theory of economic aggregates, measurement and policy aspects of national income. (Spring—evening)

**210 Seminar in Economics (3)**

Hsieh

Methodology of economics, review of contemporary macroeconomics and microeconomics both in their positive and normative aspects. Open only to students who have completed 15 hours of graduate work in economics. (Spring—evening)

**215-16 Mathematical Economics (3-3)**

Solomon

Applications of the calculus to the theory of demand, cost, and production; profit maximization; etc. Applications of differential and difference equations in economic theory. Prerequisite: Economics 203-4 and 205, and a one-year calculus sequence. (Academic year—evening)

**217-18 Survey of Economics (3-3)**

Watson, Holman

For graduate students in fields other than economics. *First half:* price theory. *Second half:* income and employment theory. Not open to graduate students in economics. (Academic year—evening; summer 1967—Economics 217)



- 223-24 Monetary Theory and Policy** Aschheim  
(Formerly *Monetary Policy and Central Banking*)  
Theory of monetary policy within the framework of contemporary American central banking. (Academic year—evening)
- 233-34 Seminar: Land Policy Problems in Latin America (3-3)** Carroll  
Analysis of current issues of land and water resource problems and policies related to economic development in Latin American countries, and evaluation of programs and projects supported by international assistance. (Academic year—evening)
- 237 Seminar: Economics of Natural Resources Policy (3)** Brewer  
Analysis of public policy problems relating to natural resources development and management. Specific topics include public investment criteria, time discounting problems, regional analysis, and project evaluation. (Fall—evening)
- 238 Research Seminar: Natural Resources Economics (3)** Brewer  
Discussion of student research projects; particular attention to the role of hypothesis, data adequacy, evaluatory criteria, testing procedures, and interpretation. (Spring—evening)
- 241-42 Labor Economics (3-3)** Staff  
Analysis of labor markets, theories of wages, impact of collective bargaining, causes of unemployment, public policies and programs. (Academic year—evening)
- 251-52 Economic Development (3-3)** Schmidt, Galbreath  
Theories and problems of economic growth; special attention to the underdeveloped countries. (Academic year—evening)
- 253 Productivity Analysis (3)** Kendrick  
Concepts, measurement, and analysis of productivity, private and public; relationship of productivity to program-planning-budgeting systems. (Fall—evening)
- 261 Welfare Economics (3)** Stewart  
(Formerly *Theory of Public Finance*)  
Theories of welfare economics and their applications to public policy; analysis of selected topics in public policy. (Fall—evening)
- 263-64 Public Finance Theory and Policy (3-3)** Rafuse  
(Formerly *Public Finance and Fiscal Policy*)  
Special problems in contemporary public finance theory and policy. (Academic year—evening)
- 265 Economics of Regulatory Policy (3)** Staff  
(Formerly *Theory of Economic Policy*)  
Analysis of economic impact of government regulatory policies and practices. (Fall—evening)
- 266 Antitrust Policy (3)** Staff  
(Formerly *Theory of Economic Policy*)  
Historical background; economics of monopoly, impact of antitrust legislation and policy. (Spring—evening)



- \*267 **Seminar: Soviet Economy** (4) Hardt  
Development of the Soviet-type economy. Organization, policies, and problems: monetary, fiscal, production, allocative, foreign trade, economic growth. Workshop: case studies on sectoral or problem areas. Prerequisite: graduate status; Economics 101, 102, 133, and 134, or equivalent; permission of instructor. (Fall—evening)
- \*268 **Seminar: Economic Theory and Development in Communist Countries** (4) Hardt  
Appraisal of the Soviet-type model for economic development in the institutional framework of Soviet and other communist processes of economic development. Workshop: case studies on Eastern Europe, Chinese and other communist economies. Prerequisite: graduate status; Economics 101, 102, 133, and 134, or equivalent; permission of instructor. (Spring—evening)
- \*269 **Economy of Communist China I** (3) R. Field  
Analysis of organization, operation, policies, and problems. Development of the economy under communism. (Fall—evening)
- \*270 **Economy of Communist China II** (3) R. Field  
Continuation of Economics 269, examining critical problems of development. Prerequisite: Economics 269 or permission of instructor. (Spring—evening)
- †275 **Econometrics I: Introduction** (3) Brown, Peskin  
Survey of applications and introduction to statistical methods for estimating economic relationships for the economist with some mathematical facility. Prerequisite: one year of elementary statistics and Economics 203-4 and 205, or equivalent as approved by the instructor. (Fall—evening)
- †276 **Econometrics II: Theory and Method** (3) Brown, Peskin  
Continuation of Economics 275; emphasis on errors in variables, confluence, nonspherical disturbances, identification, and multi-equation estimation. Prerequisite: Economics 275. Recommended: a course in matrix theory. (Spring—evening)
- 281-82 **International Economics** (3-3) Schmidt  
*First half:* theory of international trade and factor movements. *Second half:* theory of balance-of-payments adjustment. (Academic year—evening)
- 285-86 **Economic Development of Latin America** (3-3) Staff  
Current policies and programs, capital formation, public and private; foreign loans and investment; social and technological preconditions of investment. (Academic year—evening)
- 299-300 **Thesis Research** (3-3) Staff  
(Academic year—as arranged; summer 1967)

\* Primarily for students in the Institute for Sino-Soviet Studies.

† Interdepartmental course offered by the departments of Economics and Statistics. Students may register in either department.



## FOURTH GROUP \*

- 312 **Seminar: Price Theory** (3) Watson  
Discussion of topics of price theory from recent journal articles.
- 313 **Seminar: Economic Thought in the 20th Century** (3) Burns  
Continuation of Economics 201-2. Principal trends in English, Continental, and American economic thought during the present century.
- 315 **Seminar: Topics in Mathematical Economics** (3) Solomon  
General equilibrium theory and economic programming models. Other selected topics of current interest. Prerequisite: Economics 215-16.
- 321 **Seminar: Monetary Theory** (3) Aschheim  
Recent developments in monetary theory.
- 341 **Seminar: Labor Economics** (3) Staff  
Current problems in theory and policy.
- 363 **Seminar: Public Finance** (3) Staff  
Selected topics of current interest.
- †378 **Seminar: Topics in Econometrics** (3) Brown  
Current econometric literature. Prerequisite: Economics 276.
- ‡379-80 **Readings in Economic History** (3-3) Sharkey  
Prerequisite: the appropriate second-group preparation and consent of instructor. (Academic year—evening)
- 390 **Seminar: International Economic Theory** (3) Schmidt  
Examination of recent contributions in this field.
- 391 **Seminar: International Economic Policy** (3) Schmidt  
Topics selected from current significant policy problems.
- 398 **Advanced Reading and Research** (arr.) Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)
- 399 **Dissertation Research** (arr.) Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

\* Fourth-group courses are limited to graduate students, but they are primarily for doctoral candidates. They are offered as the demand requires.

† Interdepartmental course offered by the departments of Economics and Statistics. Students register in either department.

‡ Interdepartmental course offered by the departments of Economics and History. Students register in either department.



## Education\*

*Professors* B.S. Root (*Chairman*), G.L. Angel, W.T. Carroll, F.N. Hamblin, Carol St. Cyr, W.A. McCauley, J.T. Dailey (*Research*), Mary Coleman, H.G. Detwiler, Daniel Sinick

*Professorial Lecturers* Anthony Marinaccio, J.B. Holden, J.P. Walsh, J.C. Lang, Ruth Newman, W.W. Chase, W.E. Amos

*Associate Professors* R.E. Baker, Martha Rashid, R.W. Eller, S.R. Westerlund, Leonard Nadler, C.O. McDaniels, Marcella Brenner, J.S. Aven (*Research*)

*Associate Professorial Lecturers* LuVerne Walker, Beverly Crump, Helen Mitchell, Nicholas Long, Martha Ware, H.W. Houghton

*Assistant Professors* J.G. Boswell, Margaret McIntyre, R.L. Williams, Gloria Horrworth, C.A. Neyman, Jr. (*Research*), Margaret Kiley, Eloise Calkins, Ruth Peterson, J.M. Snyder (*Research*), Clarke Trundle

*Assistant Professorial Lecturers* R.J. Kubalak, Shirley McCune, David Iwamoto, J.D. Gates, Marjorie Daly, Marianne Phelps, Lianna Larabee, D.M. Ehat, Abbie Smith, Joanne Parker

*Instructor* Miriam Jaegerman

*Bachelor of Arts in Education*.—Prerequisite: the Education curriculum, pages 65–66, or the equivalent, or a certificate of graduation from an approved normal school or the equivalent.

Required: the satisfactory completion of a program of at least sixty-six semester hours in addition to the general education background courses, pages 65–66. Each program is planned individually to meet the certification requirements of the student, see pages 84–97.

American Thought and Civilization 101 *American Civilization* is recommended as a senior-year elective for Education majors.

*Master of Arts in Education*.—Prerequisite: a Bachelor's degree from an accredited institution. Programs are planned individually. The following areas of specialization are available: (1) adult education, (2) classroom teaching—to include strengthening mastery of teaching field, (3) comparative education, (4) curriculum, (5) elementary education, (6) employee training, (7) guidance, (8) health education, (9) history of education, (10) human growth and development, (11) philosophy of education, (12) physical education, (13) reading, (14) school administration, (15) secondary education, (16) special education, and (17) student personnel work in higher education. (See pages 100–103.)

American Thought and Civilization 101 *American Civilization* is available for graduate credit.

*Education Specialist*.—See page 104.

*Doctor of Education*.—See pages 105–7.

## SECOND GROUP

### 107 Elementary School Teaching Foundations (9) Brenner, Horrworth

Limited to students in the Special Program in Elementary Teacher Education. A block course, dealing with the content of traditional courses in educational psychology; history of education; human development, learning, and teaching; society and the school; introduction to elementary education. One hundred and thirty-five class hours, supplemented by field experiences. (Summer 1967)

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



- 108 Human Development, Learning, and Teaching (3)** Staff  
Lecture (2 hours), conference (1 hour), field work (3 hours). Principles of effective teaching based on an understanding of human development and the nature of learning. Prerequisite: Psychology 22. (Fall and spring—day and evening; summer 1967)
- 111 Elementary School Curriculum and Methods (15)** McIntyre and Staff  
For seniors. Procedures in teaching mathematics, science, social studies, language arts (reading, literature, spelling, handwriting, and oral and written expression), art, music, and physical education. Observation and participation two mornings a week. Prerequisite: Education 108 and 123. (Fall—day)
- 112 Educational Measurement (3)** Iwamoto, Westerlund  
Scope, needs, services to students, selection and construction of teacher-made tests, interpretation of tests for evidence purposes. Prerequisite: Education 108 and 123. (Fall and spring—day and evening; summer 1967)
- 113 Elementary School Art (3)** Crump  
For undergraduates in the elementary school curriculum. Materials and methods. Material fee, \$5. Prerequisite: Psychology 1 and 22. (Fall: lecture and laboratory (3 hours)—evening, field work—as arranged; summer 1967)
- 114 Elementary School Music (3)** Mitchell, Daly  
For undergraduates in the elementary school curriculum. Materials and methods. Prerequisite: Psychology 1 and 22. (Spring: lecture (2 hours)—evening, field work (2 hours)—as arranged; summer 1967)
- \*115 Elementary School Teaching of Reading (3)** Calkins  
Introduction to methods, techniques, materials, and activities essential to a good elementary school reading program. Prerequisite: Education 108 and 123, or teaching experience. (Spring: lecture (2 hours)—evening, field work (2 hours)—as arranged; summer 1967)
- \*116 Elementary School Social Studies (3)**  
Content, methods, materials, and activities essential in the elementary school curriculum. Prerequisite: Education 108 and 123, or teaching experience. (Summer 1967)
- \*117 Elementary School Science (3)** St. Cyr  
Content, methods, materials, and activities essential in the elementary school curriculum. Prerequisite: Education 108 and 123, or teaching experience. (Spring: lecture (2 hours)—evening, field work (2 hours)—as arranged; summer 1967)
- 119 Elementary School Curriculum (12)** Brenner and Staff  
Limited to students in the Special Program in Elementary Teacher Education. A block course; reading, children's literature, communication arts, arithmetic, science, social studies, art, music, and physical education. One hundred and eighty class hours, supplemented by appropriate observations and field experiences. (Fall—day)

\* This course may not be taken by students who have completed or plan to enroll in Education 111.



**\*120 Elementary School Mathematics (3)** St. Cyr

Content, methods, materials, concepts of "new mathematics," and activities essential in the elementary school curriculum. Prerequisite: Education 108 and 123, or teaching experience. (Fall: lecture (2 hours)—evening, field work (2 hours)—as arranged; summer 1967)

**123 Society and the School (3)** St. Cyr and Staff

Lecture (2 hours), conference (1 hour), field work (2 hours). Historical and social development of education at local, national, and international levels; cooperation of the school with other community agencies; functions of school personnel. (Fall and spring—day and evening; summer 1967)

**\*128 Children's Literature (3)** Walker, McIntyre

Newer books for children and the children's classics, contribution of literature to child development, children's original expressions. (Spring: lecture (2 hours)—evening, field work (2 hours)—as arranged; summer 1967)

**131 Secondary School Principles and Methods (3)** Boswell

For seniors. Classroom management and teaching techniques for initiating, guiding, and evaluating learning activities. Prerequisite: Education 108 and 123. Field work in the public schools to be arranged. (Fall and spring—day)

**133 Supervised Experience in Adult Education (3 to 6)** Nadler

Field work, internship, and instructional practice in adult education, employee training, or higher education. May be repeated for credit. Admission by permission of instructor. (Fall and spring—as arranged)

**134 Student Teaching in Secondary Schools (6 to 9)** Boswell and Staff

For seniors. Sections A, B, and C are for full-time academic majors. Section D is for physical education majors (Hanken, Stallings). Admission by permission of the instructor. Prerequisite: Education 131. (134A: fall—as arranged; 134A, 134B, 134C, and 134D: spring—as arranged)

**135 Student Teaching in Elementary Schools (9)** McIntyre and Staff

For seniors. Admission by permission of instructor. Prerequisite: Education 111 or the equivalent. (Fall and spring—as arranged)

**SPECIAL METHODS COURSES†**

To be elected in the senior year after substantial preparation in the teaching fields concerned by students in the secondary school curriculum. Course requirements and hours of credit vary with license requirements. Practices of successful teachers studied; actual teaching content as found in current tests and courses of study reviewed.

**136 Teaching English in Secondary Schools (3)** Williams

Prerequisite: 18 semester hours in English. (Spring: lecture (2 hours)—evening, field work (2 hours)—as arranged)

\* This course may not be taken by students who have completed or plan to enroll in Education 111.  
† Prerequisite to all special methods courses: Education 108, 123, and 131. Additional prerequisites are stated under each course.



**137 Teaching Speech (3)**

Kosh

Prerequisite: 18 semester hours in speech or permission of instructor.  
(Summer 1967)

**138 Teaching Social Studies in Secondary Schools (3)**

Boswell

Prerequisite: 24 semester hours of social studies. (Spring: lecture (2 hours)—evening, field work (2 hours)—as arranged; summer 1967)

**139 Teaching Art in Secondary Schools (3)**

Crump

Prerequisite: 24 semester hours of Art. Material fee, \$4.50. (Spring: lecture (2 hours), laboratory (2 hours)—Saturday morning)

**140 Teaching Mathematics in Secondary Schools (3)**

Gates

Prerequisite: Mathematics through calculus. (Spring—evening)

**141 Teaching Latin (3)**

Objectives; construction of courses of study; techniques of motivation, presentation, and drill; areas of enrichment. For junior and senior high school teachers. (Not offered 1967-68)

**142 Teaching Music in Secondary Schools (3)**

Prerequisite: 24 semester hours of Music. (Not offered 1967-68)

**144 Teaching Science in Secondary Schools (3)**

Eller

Prerequisite: 24 to 40 semester hours of science. (Spring: lecture (2 hours)—evening, field work (2 hours)—as arranged)

**146 Teaching Foreign Languages (3)**

McSpadden

Prerequisite: 18 semester hours of one foreign language. (Spring—day)

**THIRD GROUP \*****203-4 Comparative Education (3-3)**

Comparison of United States with foreign educational systems, particularly those of Russia, West Germany, Denmark, Switzerland, France, the British Isles, Canada, and Australia. (Not offered 1967-68)

**†205-6 The Curriculum (3-3)**

St. Cyr

For experienced teachers. *First half*: curriculum foundations and issues; comparison of curriculum patterns. *Second half*: curriculum development in subject areas; group consideration of student problems. (Academic year—evening)

**†207 Curriculum Materials (3 to 6)**

St. Cyr

For experienced teachers. Construction of courses of study and classroom teaching aids, with direct application to students' situations. (Summer 1967)

**†208 Human Development (3)**

Rashid, McDaniel

Contribution of various disciplines to an understanding of human development throughout the life span; emphasis on practical implications of relevant research. (Spring—day; summer 1967)

\* A degree from an accredited institution is prerequisite to all third-group courses.

† Prerequisite: adequate professional preparation.



- 209 Child Development (3)** Rashid  
Interdisciplinary approach to child development. Analysis, interpretation, and practical implications for instruction of research in disciplines contributing to a knowledge of child development. (Fall—evening)
- 210 Adolescent Development (3)** McDaniels  
Interdisciplinary approach to adolescent growth and development. Analysis, interpretation, and practical implications for instruction of research in disciplines contributing to a knowledge of the adolescent. (Spring—evening)
- \*212 Educational Measurement (3)** McCauley  
Basic measurement techniques; construction, selection, administration, and interpretation of objective and essay-type examinations; statistical analysis of test results; laboratory use of test instruments. (Fall—evening; summer 1967)
- 213-14 History of Education (3-3)** Williams  
*First half:* European backgrounds of American education. *Second half:* evolution of the American school system. (Academic year—evening; summer 1967—Education 214)
- \*216 Education of Slow-learning Children (3)** Amos  
Identification, nature, and needs of slow-learning elementary and junior high school children. Emphasis on diagnosis and treatment of learning difficulties. (Summer 1967)
- \*217-18 Philosophy of Education (3-3)** Westerlund  
*First half:* to help students formulate a personal philosophy of education. *Second half:* social foundations of education—forces that shape policies and offerings of the school. (Academic year—Saturday morning; summer 1967—Education 217)
- \*219 Elementary School Classroom Procedures (3)** Baker  
Current classroom practices; emphasis on planning, unit teaching, techniques in discipline; individual and group evaluation techniques, resources for learning, providing for individual differences. (Summer 1967)
- \*223-24 Reading Problems (3-3)** Coleman  
Elementary and secondary school reading difficulties; classroom and clinical techniques in solving reading problems. Prerequisite: one or more years of recent teaching experience. (Academic year—evening; summer 1967—Education 223)
- 226 Reading in Secondary School and College (3)** Coleman  
Methods, techniques, and materials necessary for developing efficient reading skills, including skills in content subjects; organizing and evaluating reading programs. (Spring—evening)
- 227 Basic Issues in Elementary Education (3)** Baker  
Identification, definition, and analysis of some of the most important problems facing the contemporary American elementary school. (Fall—Saturday morning)

\* Prerequisite: adequate professional preparation.



**228 Instructional Areas in Elementary Education (3)**

Baker

Objectives, organization, content, and teaching methods in language arts, arithmetic, social studies, science, arts and crafts, health and physical education. (Spring—Saturday morning)

**\*229 Administration of Elementary Education (3)**

Carroll

For experienced teachers and administrators. Achieving instructional objectives, organizing and servicing teaching activities, coordinating school and community life. (Fall—evening; summer 1967)

**230 Intern Seminar in Elementary School Teaching (3)**

Brenner, Horrworth

Limited to students in the Special Program in Elementary Teacher Education. Scheduled weekly meetings for discussion of common problems and for cooperatively planned work on areas of individual and group needs. (Spring—Saturday morning)

**\*231 Secondary School Classroom Procedures (3)**

Boswell

Current classroom practices: teacher-pupil planning, group procedures, initiatory and culminating activities, individual and group evaluation techniques, teaching aids, etc.; review of recent literature. (Summer 1967)

**\*232 Supervision of Elementary Education (3)**

Carroll

For experienced teachers and administrators with two or more years of teaching experience. Review of modern supervisory concepts including practices in the operation of the elementary school. (Spring—evening)

**\*233 Audio-visual Education (3)**

Kubalak

Lecture (2 hours), laboratory (1 hour). Selection, evaluation, and use of audio-visual materials; administrative problems in care, operation, maintenance, and use of such materials and equipment. Material fee, \$7. (Spring—evening; summer 1967)

**†234 Communication Skills for Teachers and Principals (3)**

Staff

Life-space interview in the school setting between teacher and child or principal and child; planned interview between parent and teacher, principal, or counselor. (Spring—evening)

**†235 Community Factors Affecting Mental Health (3)**

Staff

Contributions of family, neighborhood, and school to mental-emotional well-being of school children; social class, cultural disadvantage, I.Q., race, motivation, and cognition as related to school performance. (Fall—evening)

**†236 Consultation Affecting Emotional Factors in Learning (3)**

Staff

For school staff, clinical personnel, and representatives of community agencies. Experience-centered seminar for development of skill in consultant and consultee relationships; use of Crisis Teaching, Life-space Interviewing, etc. (Fall—evening)

\* Prerequisite: adequate professional preparation.

† Offered by the Washington School of Psychiatry in affiliation with the University; available to graduate students in the School of Education and to qualified students in the Division of University Students. Classes are held late in the afternoon or evening at 1610 New Hampshire Avenue, N.W. For information consult the Washington School of Psychiatry, telephone: 667-3008.



- \*237 **Problems Confronting the Elementary Teacher** (3) Staff  
For elementary school teachers, principals, supervisors, and pupil personnel workers. Understanding the child's academic and social behavior. Lecture and clinical discussion based on case material. (Fall—evening)
- \*238 **Learning Problems and Disabilities** (3) Staff  
Identification of emotional disturbance, therapeutic role of teacher, management of disturbing behavior, failures and self-image. (Fall and spring—evening)
- \*239 **The Adolescent at School or Work** (3) Staff  
Dynamics of adolescence with emphasis on school procedures, methods, and means of meeting personality needs including community and cultural factors. (Spring—evening)
- 240 **Interpersonal Dimensions of Teaching** (3) Staff  
Designed to increase self-understanding of the teachers' everyday school relationships vis a vis pupils, parents, staff, and consultants. Limited to 15 students. (Spring—evening)
- †241 **Education of the Gifted** (3) Rashid, Amos  
For classroom teachers. Nature and discovery of giftedness, provisions for the gifted in regular classes, experimental projects. (Spring—evening; summer 1967)
- 242 **Behavior of the Preschool Child** (3) Staff  
The child from 2½ to 5 years old. Parental care, school, the community, modes of optimal and minimal expression. Speech, use of body, use of play and expressive materials. (Fall—evening)
- †243 **Human Relations in the Classroom** (3) Marinaccio  
Principles and practices involved in interpersonal relationships between learner and teacher and among learners. (Summer 1967)
- 245 **School and Community** (3) Angel  
The school as an important member of a team of social agencies that builds the community. (Fall and spring—evening; summer 1967)
- †247 **Vocational Education** (3) Walsh  
Development, current conceptions, agencies involved, problems, and trends in the United States and foreign countries at secondary and post-secondary levels. (Not offered 1967-68)
- 248 **Student Personnel Work with College Groups** (3) Kirkbride  
Principles and procedures of personnel work with campus groups. Promotion, limitation, and coordination of campus group activities and development of student leadership. (Spring—evening)
- †249-50 **Practicum in Student Personnel Work** (1 to 3-1 to 3) Phelps, Larabee  
Supervised practical experience in student personnel services. Admission by permission of instructor. (Academic year—as arranged)

\* See (†) footnote on page 222.

† Prerequisite: adequate professional preparation.



- \*251 Foundations of Guidance and Personnel Services (3)** Kiley, Detwiler  
(Formerly *Guidance in Elementary and Secondary Schools*)  
Introductory survey: definitions, scope, principles, historical background, organization, services, emerging trends, and issues. (Fall and spring—evening; summer 1967)
- 252 Organization and Administration of Guidance Services (3)**  
For guidance directors, supervisors, and experienced school counselors who hope to qualify for such positions. Prerequisite: a minimum of 15 semester hours of approved graduate work in measurement and guidance. (Spring—evening)
- 253 Analysis of the Individual for Purposes of Counseling (3)** Detwiler  
Detailed study of individual analysis and appraisal techniques. Development of systematic case study. Prerequisite: Education 112 or equivalent. (Fall and spring—evening; summer 1967)
- \*254 The Junior High School (3)**  
Purposes, organization, core program, guidance, developing course of study, extra-classroom activities. (Not offered 1967-68)
- \*255-56 Secondary Education (3-3)** Root  
*First half:* current proposals for improvement of secondary education.  
*Second half:* current problems in each subject-matter field. (Academic year—evening; summer 1967)
- 257 Educational and Occupational Development (3)** McDaniels  
Theories of career development; structure of education, training, and work in the United States; sources, forms, collection, evaluation, and dissemination of educational-occupational information. (Fall and spring—evening; summer 1967)
- 258 Techniques of Counseling (3)**  
Intensive study of educational and psychological processes involved in counseling interviews. Vocational, educational, and personal counseling problems. Prerequisite: 12 semester hours in testing and guidance, including Education 253 and 257. In exceptional cases Education 253 or 257 may be taken concurrently with 258. (Fall and spring—evening; summer 1967)
- \*259 Secondary School Administration (3)**  
For experienced teachers and administrators with two years of secondary school teaching. Survey of administration including practices of the modern high school. (Fall—evening; summer 1967)
- \*260 Secondary School Supervision (3)** Carroll  
For experienced teachers and administrators with two or more years of teaching experience. Review of modern supervisory concepts including practices followed in the operation of the school. (Spring—evening)
- \*261-62 Practicum in Guidance (3-3)** Detwiler  
Supervised practical instruction. Prerequisite: graduate work in counseling. Admission by permission of Department Chairman. (Academic year—as arranged; summer 1967)

\* Prerequisite: adequate professional preparation.



**263-64 Employee Training (3-3)** Nadler

*First half:* nature and purpose, review of major programs—orientation, supervisory, apprentice, clerical skills, communication. *Second half:* administrative problems and practices, training media, coordination with other management functions. Prerequisite: adequate professional preparation or two years of experience in employee training. (Academic year—evening)

**\*269-70 Business Management of Schools I-II (3-3)** Carroll

*First half:* philosophy, responsibilities, and functions of the business management office in public education institutions. *Second half:* practicum in educational business management. (Not offered 1967-68)

**\*271 The Teacher and School Administration (3)** Carroll

Role of federal, state, and local administrative units; school finance; legal controls; school plant; public support; improving teaching conditions. (Fall and spring—evening; summer 1967)

**\*272 The Teacher and School Supervision (3)** Carroll

Nature, organization, human relationships, and techniques. (Fall and spring—evening; summer 1967)

**\*273-74 Teacher Education (3-3)** Boswell

*First half:* aims, objectives, and basic issues; study of outstanding and experimental programs. *Second half:* recruitment and selection, general education, teaching-field preparation, professional sequences, laboratory experiences. (Academic year—evening)

**\*275 School Finance (3)** Carroll

Educational financial theory, practice, and control, including methods of financing. (Fall—evening)

**\*276 Seminar: Public Relations in School Administration (3)** Carroll

Purposes, gathering materials, disseminating agencies, publicity media, public participation in policy making. (Spring—evening)

**\*278 School Law (3)** Ware

Sources and scope of school law; legal rights and responsibilities of teachers, pupils, and taxpayers. Other legal problems of major interest to the group. (Spring—evening)

**\*279-80 Adult Education (3-3)** Nadler

*First half:* current concepts and objectives, agencies involved, programs on all levels—international through community. *Second half:* the adult as a learner, the teacher of adults, learning-teaching activities, administration of adult education programs. (Academic year—evening; summer 1967—Education 279)

**†281 Seminar: Education in the Soviet Union (3)**

History of Soviet education; comparison of current American and Soviet education; relationship between Soviet education and Soviet life; type of society and citizen Soviet leaders try to create, conditions which foster or impede their efforts. (Not offered 1967-68)

\* Prerequisite: adequate professional preparation.

† Primarily for students in the Institute for Sino-Soviet Studies.



**\*282 Seminar: Education in Communist China (3)**

(Not offered 1967-68)

**†283-84 Higher Education (3-3)**

Angel

*First half:* development, purposes, current programs, trends, and issues.  
*Second half:* curricula in liberal arts and professional fields; institutional organization, administration, services, and facilities. (Academic year—evening)

**†285 Student Activities (3)**

Angel

Nature and purposes of selected activities—homeroom, clubs, assemblies, school publications, student council, interscholastic contest; particular attention to sponsorship, participation, finance, and evaluation. (Summer 1967)

**286 Introduction to Student Personnel Work (3)**

Kirkbride

Student personnel services in American higher education. Personnel work as an integral part of the college program; introduction to the literature of the field. (Fall—evening)

**†287-88 Clinical Study of Reading Problems (3-3)**

Coleman

For advanced students. Diagnostic and corrective work under supervision of the Reading Center. Prerequisite: Education 223-24 or equivalent. Material fee, \$8 a semester. (Academic year—evening)

**†289 Supervisory Problems in Reading (3)**

Coleman

For experienced teachers, principals, supervisors, and superintendents. Problems in planning, reorganizing, and improving the total reading program and in promoting cooperative staff effort toward increasing teaching efficiency. (Not offered 1967-68)

**291 Planning the School Plant (3)**

Selection of sites; evaluation of existing buildings; utilization of present facilities; adaptation to curricular needs; building, operation, and maintenance problems. (Not offered 1967-68)

**293-94 Research (3-3)**

Staff

Individual research under guidance of a staff member. Program and conferences arranged with an instructor. (Academic year—as arranged; summer 1967)

**†295 Research Methods and Procedures (3)**

Westerlund

Required of all candidates for graduate degrees in Education. To be taken early in the graduate program. Prerequisite: elementary course in statistics. (Fall and spring—day and evening; summer 1967)

**296 Seminar: Educational Research (3)**

Analysis of scientific approaches to problems in education and evaluation of the application of research techniques. Required of all candidates for the Ed.D. degree and open to candidates for other advanced degrees. Prerequisite: Education 295 or equivalent. (Fall and spring—evening)

\* Primarily for students in the Institute for Sino-Soviet Studies.

† Prerequisite: adequate professional preparation.



- \*297 **Personnel Administration** (3) Carroll  
Organization and administration of personnel programs for educational institutions. Basic philosophy, principles, responsibilities, and functions. (Fall—evening; summer 1967)
- 298 **Seminar: Personnel Administration** (3) Carroll  
Research: policies, rules and regulations, staff organizations, negotiations. (Spring—evening)
- 299-300 **Thesis Research** (3-3) Staff  
Required of Master of Arts in Education candidates writing Master's theses. (Academic year—as arranged; summer 1967)
- \*301 **Data Processing in Education** (3) Staff  
Machine accounting and computer technology for counselors, teachers, and administrators. (Summer 1967)
- 331 **Development of the Young Child** (3) McIntyre  
Lecture and laboratory. Basic concepts and problems of child development; observation, behavior patterns, child study. (Fall—evening)
- 332 **Curriculum for Early Childhood** (4) McIntyre  
Lecture and field. Language arts, science, mathematics, social studies, and the creative arts, emphasizing adaptation to skills and needs of the young child; review of new programs. (Spring—evening; summer 1967)
- 333 **Early Childhood Classroom Management** (4) McIntyre  
Lecture and field. Planning, reporting, records, equipment, space use, working with parents, and survey of types of preschools. (Fall—evening)
- 334 **Community Resources for the Young Child** (4) McIntyre and Staff  
Lecture and field. Use of community agency services and specialists in pertinent fields. (Spring—evening)
- 335 **Practicum in Early Childhood Education** (3 to 6) McIntyre  
Supervised teaching and seminar in the early childhood field. Prerequisite: Education 331, 332, and 333; or equivalent; and permission of instructor. (Fall and spring—day)
- †348 **Introduction to Art Therapy** (3) Staff  
Theoretical and practical problems facing those who use art activity in the service of personal development. (Spring—evening)
- †349 **Art History and Art Theories** (3)  
Changes of artistic style from the early Middle Ages to the present; correlation with contemporary theories. (Summer 1967)
- †350 **Techniques of Art and Art History Teaching** (3)  
Techniques of painting by reconstructing details of pictures; instruction in preparation of audio-visual media and display techniques; analysis of form and content of art gallery tours. (Summer 1967)

\* Prerequisite: adequate professional preparation.  
† See (†) footnote, page 222.

† Offered in conjunction with the National Gallery of Art and the Bureau of Cooperative Research, U. S. Office of Education. Admission by permission of the chairman of the Department of Education.



- 352 Advanced Career Development (3)** McDaniels  
Advanced workshop for experienced counselors; theory and uses of new educational media in guidance; field study of job opportunities in area business, industry, and government agencies. (Summer 1967)
- 355 Counseling in Groups (3)** Staff  
(Formerly *Group Counseling Practicum*)  
For experienced counselors and psychologists. Peer-group relationships with emphasis on adolescent groups. Principles of group dynamics as related to interaction within groups. Techniques and practice in group counseling. (Fall—Saturday morning)
- 356 Seminar: Guidance and the Disciplines (3)** Staff  
For experienced counselors. Exploring the foundations of guidance through the disciplines of psychology, sociology, economics, anthropology, and philosophy. (Spring—Saturday morning)
- 357 Mental Hygiene (3)** McDaniels  
(Formerly *Seminar: Psychology of Adjustment and Mental Hygiene*)  
Mental health problems; emphasis on needs of counselors, teachers, and others working with children and adolescents. (Fall and spring—evening; summer 1967)
- 379 Practicum in Adult Education (3 to 6)** Nadler  
Supervised practical experience in various forms of adult education. May be repeated for credit. Admission by permission of instructor. (Fall and spring—as arranged)
- 380 Sensitivity Training: Laboratory Method (3)** McCune, Nadler  
A sensitivity learning experience in human relations using unstructured group experience, individual feedback, experimentation, and practice. (Fall—evening; summer 1967)
- 381 Adult as a Learner (3)** Angel  
Psychology of learning as applied to adults; effect of age on learning: physical and social environment in adult education situations. (Fall—evening)
- 382 Instructional Technology in Adult Education (3)** Ehat  
Methods, techniques, and devices in adult education; traditional methods, developing action-oriented learning situations, programmed instruction, and systems approach in developing training materials. (Fall—evening)
- 383 Counseling of Adults (3)**  
Concepts and practices with particular emphasis on the needs of adults in work situations. (Spring—evening)
- 384 Evaluation of Adult Education (3)** McCune  
Measurement and evaluation of adult education in school and nonschool agencies—business, industry, government, voluntary, and community. (Not offered 1967–68)
- 386 Current Issues in Adult Education (3)** Holden  
Investigation of current issues in adult education. (Spring—evening)



- 387 **Administration of Adult Education (3)** Staff  
Program planning, staff development, fiscal operations, facilities, and maintenance of effective community relations. (Spring—evening)

#### FOURTH GROUP

A Master's degree from an accredited institution is prerequisite to all fourth-group courses. All seminars listed in the fourth group are open to doctoral candidates or other post-Master's degree students with approval of instructor. Study is individually planned on the basis of previous study and experience in the subject field to attain an advanced level of competence and meet identified professional needs or field requirements in a doctoral program.

Each of the following courses is offered fall and spring—as arranged and summer 1967. Each course may be repeated for credit.

- |  |                     |
|--|---------------------|
| 401 Seminar: History of Education (arr.)               | Williams            |
| 403 Seminar: Philosophy of Education (arr.)            | Westerlund          |
| 405 Seminar: Human Growth and Development (arr.)       | Rashid              |
| 411 Seminar: Elementary Education (arr.)               | Baker               |
| 413 Seminar: Secondary Education (arr.)                | Root                |
| 421 Seminar: Adult Education (arr.)                    | Nadler              |
| 423 Seminar: Higher Education (arr.)                   | Angel               |
| 424 Seminar: Personnel Work in Higher Education (arr.) | Kirkbride           |
| 425 Seminar: Teacher Education (arr.)                  | Baker               |
| 427 Seminar: Employee Training (arr.)                  | Nadler              |
| 431 Seminar: Administration (arr.)                     | Carroll             |
| 433 Seminar: Supervision (arr.)                        | Carroll             |
| 435 Seminar: Elementary Administration (arr.)          | Carroll             |
| 437 Seminar: Secondary Administration (arr.)           |                     |
| 441 Seminar: Curriculum (arr.)                         | St. Cyr             |
| 443 Seminar: Guidance and Counseling (arr.)            | McDaniels, Detwiler |
| 445 Seminar: Research and Evaluation (arr.)            |                     |
| 491 Dissertation (arr.)                                | Staff               |

Preparation of a research outline; research and writing of an approved doctoral dissertation under the direction of major adviser and dissertation committee.



## English\*

*Professors* C.D. Linton, C.W. Cole, R.H. Moore, J.H. Coberly, P.H. Highfill, Jr., J.G. Allee, Jr., J.P. Reesing, Jr. (*Chairman*), R.H. Walker Jr., Milton Crane

*Adjunct Professor* J.C. Broderick

*Associate Professors* W.L. Turner, Muriel McClanahan, Elizabeth Wright, S.J. Brown, R.N. Ganz, Jr., G.E. McCandlish, C.C. Mondale, A.E. Claeysens, Jr.

*Assistant Professors* R.C. Rutledge, J.A. Quitslund, R.E. Stockton, Judith Plotz, L.C. Schaefer, Margaret Sullivan

*Assistant Professorial Lecturer* George McBride

*Instructors* Barbara Dunham, D.R. Janis, J.R. Greenya, Joan Caton, T.W. Koontz, Janet Collins, Norma Engberg, Lydia Blanchard, Mary McHenry,

Gertrude Mitchell, Nancy Powelson, J.L. Gabriel

*Lecturers* Edgar Boling, Jr., Jean Gladding, Mary Walden, D.M. Atwood, Elna Broffman, Margaret Crumbaugh, Hazel Eagle, M.M. Feick, Evelyn Lynch, Barbara Nuchims, Nancy Schick, Paula Schwartz

*Bachelor of Arts with a major in American Thought and Civilization (Field-of-Study)*†.—Prerequisite: the Arts and Letters curriculum, page 63.

Required: the general requirements, pages 69–73, and the passing of the American Thought and Civilization major examination at the end of the senior year. The coordinated field of knowledge upon which the student will be examined is summarized under four general headings: (1) European cultural history—the Renaissance and modern social and intellectual cultures as a background to contemporary civilization with particular attention to English literature and history from the 16th through the 19th centuries; (2) American history—the political, economic, social, and religious thought and experience of the American people; (3) American philosophy and fine arts—a survey of periods and movements with a knowledge of outstanding individuals; (4) American literature—a knowledge of major writers, together with a study of poetry, fiction, and drama. A proseminar (English 179–80) assists the student in preparing for the major examination. At registration, the major adviser gives each student a check list of available courses grouped as prerequisite, necessary, or desirable for completion of the major study program.

American Thought and Civilization 101 *American Civilization* is recommended as a senior-year elective for American Thought and Civilization majors.

*Bachelor of Arts with a major in English Literature (Field-of-Study)*.—Prerequisite: the Arts and Letters curriculum, page 63. English 91–92 is recommended for prospective majors.

Required: the general requirements, pages 69–73, and the passing of the English Literature major examination at the end of the senior year. The field of coordinated knowledge upon which the student will be examined at the end of his senior year is summarized under the following general headings: (1) the history of English literature from the Anglo-Saxon period; (2) the chief English writers (a certain familiarity with each man and his main works and a detailed knowledge of Shakespeare); (3) English social and political history as it bears upon or is reflected in the literature; (4) European intellectual backgrounds and movements which have affected English literature. The proportion of work taken in each of these areas should be worked out by the student in consultation with one of the English Literature advisers. A proseminar (English 199–200) assists the student in preparing for the major examination. A detailed description of the major is available in the Office of the Dean of Columbian College of Arts and Sciences.

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.

† See page 166 for description of American Thought and Civilization University-sponsored course.



*Master of Arts in the field of American Literary and Cultural History.*—Prerequisite: an undergraduate major at this University, or the equivalent, in American Thought and Civilization, English Literature (with introductory courses in American literature and American history), or History (with American history as a major part).

Required: the general requirements, pages 77–79, including: (1) twenty-four semester hours of course work, planned in consultation with the adviser on the basis of the student's undergraduate preparation; (2) a Master's thesis (six semester hours) written upon an approved topic under the direction of the instructor in whose field the major portion of the material falls; (3) a written Master's Comprehensive Examination on a reading list assigned to all students registered in this degree program.

*Master of Arts in the field of English and American Literature.*—Prerequisite: an undergraduate major in English Literature or American Thought and Civilization at this University; or twenty-four semester hours in English and/or American literature above the sophomore level.

Required: the general requirements, pages 77–79, including: (1) twenty-four semester hours of course work, planned in consultation with the adviser on the basis of the student's undergraduate preparation, to include a comprehensive survey of American literature and of English literature from 1600; (2) a Master's thesis (six semester hours) written upon an approved topic under the direction of the instructor in whose field the major portion of the material falls; (3) a written Master's Comprehensive Examination on American literature and on English literature from 1600.

*Master of Arts in the field of English Literature.*—Prerequisite: an undergraduate major in English Literature at this University, or twenty-four semester hours in English literature above the sophomore level. The student who has not passed the major examination in English at this University must take a candidacy examination which, in its scope and difficulty, is comparable to the major examination in English.

Required: the general requirements, pages 77–79, including: (1) twenty-four semester hours of course work, planned in consultation with the adviser; (2) a Master's thesis (six semester hours) written upon an approved topic under the direction of the instructor in whose field the material falls; and (3) a written Master's Comprehensive Examination.

*Master of Arts in the field of Linguistics.*—See pages 267–69, and the departments of Germanic Languages and Literatures, Romance Languages and Literatures, and Slavic and Oriental Languages and Literatures.

*Doctor of Philosophy field of study in American Literature: American Fiction.*—See pages 77–78, 79–80 for requirements for the degree.

*Doctor of Philosophy fields of study in English Literature: English Drama (16th Century, 17th Century, 20th Century), History of English Drama, and English Literature (17th Century, 18th Century, 20th Century).*—See pages 77–78, 79–80 for requirements for the degree.

*Doctor of Philosophy field of study in American Thought and Culture.*—See pages 77–78, 79–80.

*Bachelor of Arts in Education with a teaching field in English.*—Prerequisite: the Education curriculum, pages 65–66.

Required: the English option and the professional courses listed on pages 96–97.



**ENGLISH COMPOSITION\*****FIRST GROUP****A English for Foreign Students (3)**

Wright and Staff

Reading and writing to assist the foreign student in overcoming deficiencies in the use of English. Special attention to spelling, syntax, grammar, idiom, and vocabulary. (Fall and spring—evening; summer 1967)

**B English for Foreign Students (3)**

Wright and Staff

For second-semester foreign students not ready for English 1. Writing of expository paragraphs and themes; outlining; reading for comprehension, vocabulary, and style. (Fall and spring—evening; summer 1967)

**\*1 English Composition (3)**

Moore and Staff

Analysis and practice of expository techniques with emphasis on unity, development, and organization. (Fall and spring—day and evening; summer 1967)

**\*1x English Composition (3)**

Moore and Staff

Intensive course in English grammar and composition for students inadequately prepared for English 1. Begins with detailed instruction, drill, and exercises in basic structure of the English language and in writing paragraphs; continues with content of English 1. English 1x meets five hours a week and carries 3 semester hours of credit. Total fee, \$196 (tuition fee of \$171 plus additional fee of \$25). (Fall and spring—day and evening; summer 1967)

**\*2 English Composition (3)**

Moore and Staff

For second-semester freshmen not following Columbian College sequence. Readings and practice in expository and argumentative techniques and research procedure. Credit not given to students with credit for English 4. Prerequisite: English 1 or 1x. (Fall and spring—day and evening; summer 1967)

**\*4 English Composition (3)**

Moore and Staff

Second half of the 6-hour English Composition course required of Columbian College students. Critical analysis and practice in expository and argumentative techniques; research procedure. Credit not given to students with credit for English 2. Prerequisite: English 1 or 1x and both semesters of one of the introductory literature courses, and English 4. (Fall and spring—day and evening; summer 1967)

\* Students whose College Board English Composition Achievement Test scores suggest inadequate preparation may be assigned to English 1x or may be tested in vocabulary, spelling, grammar, standard usage, and writing skill, before placement in either English 1x or 1. Students whose scores indicate marked superiority will be allowed to waive the English 1 requirement.

All students enrolled in curricula leading to Bachelor's degrees in Columbian College (who are required to take one year of English composition and one year of literature in English, Classical Languages, French, German, Slavic, or Spanish) will follow the sequence of English 1 or 1x, both semesters of one of the introductory literature courses, and English 4.

English 1 or 1x is prerequisite to all other courses in English. English 2 is the second half of the six-hour composition requirement of students not required to follow the Columbian College of Arts and Sciences sequence.



## SECOND GROUP

- 109 **Expository Writing** (3) McClanahan  
Types of expository writing; weekly exercises based on students' needs; particular attention may be given to problems in the writing of graduate theses. Prerequisite: English 1 or 1x, and 2 or 4. (Fall—day)
- 113 **Narrative Writing** (3) Claeysens, Schaefer  
Techniques of narrative writing; class criticism of student writing. Prerequisite: English 1 or 1x, 2 or 4, and consent of instructor. (Fall—day and evening)
- 114 **The Writing of Fiction—the Short Story** (3) Claeysens, Schaefer  
Prerequisite: English 113; consent of instructor. (Spring—day and evening)
- 115–16 **The Writing of Plays** (3–3) Claeysens  
Prerequisite: consent of the instructor. (Academic year—evening)
- 118 **The Writing of Fiction—the Novel** (3) Schaefer  
Prerequisite: English 113 or English 114, consent of instructor. (Spring—day)
- 120 **The Writing of Poetry** (3) Schaefer  
(Not offered 1967–68)

## ENGLISH LITERATURE

## FIRST GROUP

- \*†51–52 **Introduction to English Literature** (3–3) Highfill and Staff  
Historical survey. Prerequisite: English 1 or 1x. (Academic year—day and evening; summer 1967)
- \*†91–92 **Introduction to European Literature** (3–3) Crane and Staff  
Consideration of various types. Prerequisite: English 1 or 1x. (Academic year—day and evening)

## SECOND GROUP†

- 121 **Medieval English Literature—Exclusive of Chaucer** (3) Allee  
(Not offered 1967–68)
- 122 **Chaucer** (3) Allee  
(Spring—day)
- 125 **Introduction to English Linguistics** (3) Allee  
Development of the English language in a historical treatment of English grammar. (Fall—evening)

\* All students enrolled in curricula leading to Bachelor's degrees in Columbian College (who are required to take one year of English composition and one year of literature in English, Classical Languages, French, German, Slavic, or Spanish) will follow the sequence of English 1 or 1x, both semesters of one of the introductory literature courses, and English 4.

† English 51–52, 71–72, 91–92; Classical Languages 71–72; French 51–52; German 51–52; Slavic 91–92 or 93–94; or Spanish 51–52 is prerequisite to all second-group courses except English 125.



- 129-30 **Elizabethan Nondramatic Literature** (3-3) Quitslund  
Nondramatic literature from 1485 to 1601. (Academic year—evening;  
summer 1967—English 130)
- 135-36 **Shakespeare** (3-3) Brown, Highfill  
(Academic year—day and evening; summer 1967—English 136)
- 139-40 **The 17th Century** (3-3) Linton  
*First half:* poetry and prose from 1603 to 1660. *Second half:* Milton.  
(Academic year—day; summer 1967—English 139)
- 141-42 **English Literature, 1660-1780** (3-3) Highfill, Misenheimer\*  
Poetry and prose of the Neoclassic period. *First half:* 1660-1740. *Sec-  
ond half:* 1740-1780. (*First half:* summer 1967. *Second half:* not of-  
fered 1967-68)
- 151-52 **The Romantic Movement** (3-3) Plotz  
Poetry and prose, 1780-1830. (Academic year—day)
- 161-62 **Victorian Literature** (3-3)  
Poetry and prose. *First half:* 1830-1858. *Second half:* 1859-1900.  
(Academic year—day)
- 165-66 **The 20th Century** (3-3) Linton  
British poetry, prose, and drama since 1900. (Academic year—day)
- 181-82 **The English Novel** (3-3) Coberly  
Major novelists, 18th and 19th centuries. (Academic year—evening)
- 183-84 **The English Drama** (3-3) Brown, Highfill  
*First half:* principally the drama of Shakespeare's contemporaries. *Second  
half:* historical survey, 1660 to present. (Not offered 1967-68)
- 192 **Medieval Legend and Saga** (3) Allee  
Celtic and Norse. (Summer 1967)
- 199-200 **Proseminar in English Literature** (3-3) Crane and Staff  
For English Literature majors. Readings, conferences, and group discus-  
sions. (Academic year—day and evening)

## THIRD GROUP

- 223-24 **Old English** (3-3) Allee  
English language and literature before 1100. *First half:* Old English  
grammar and readings. *Second half:* *Beowulf*. (Not offered 1967-68)
- 229-30 **Studies in Elizabethan Nondramatic Literature** (3-3) Quitslund  
(Not offered 1967-68)
- 235-36 **Studies in Shakespeare and His Contemporaries** (3-3) Crane  
(Academic year—evening)

\* Appointment effective September 1, 1967.



- 239-40 **Studies in 17th Century Literature** (3-3) Reesing  
*First half:* chief figures exclusive of Milton. *Second half:* Milton.  
 (Not offered 1967-68)
- 241-42 **Studies in English Literature, 1660-1780** (3-3) Highfill, Misenheimer\*  
 (Academic year—evening)
- 251-52 **Studies in the Romantic Movement** (3-3) Plotz  
 (Academic year—evening)
- 261-62 **Studies in Victorian Literature** (3-3)  
 (Not offered 1967-68)
- 265-66 **Studies in 20th Century Literature** (3-3) Linton  
 Eliot and his contemporaries. (Not offered 1967-68)
- 279 **Research Methods and Bibliographical Materials** (3) Broderick  
 To acquaint graduate students with the principal sources of bibliography  
 and with typical problems in research. (Fall—evening)
- 283-84 **Studies in Dramatic and Theatrical History** (3-3) Highfill  
*(Formerly Studies in the History of the British Drama and Theater)*  
 (Not offered 1967-68)
- 291 **Studies in Comic Literature** (3) Crane  
 (Not offered 1967-68)
- 295-96 **Studies in the History of English Literary Criticism** (3-3)  
 (Academic year—evening)
- 299-300 **Thesis Research** (3-3) Staff

#### FOURTH GROUP

- 398 **Advanced Reading and Research** (arr.) Staff  
 Limited to students preparing for the Doctor of Philosophy general exam-  
 ination. May be repeated for credit. (Fall and spring—as arranged;  
 summer 1967)
- 399 **Dissertation Research** (arr.) Staff  
 Limited to Doctor of Philosophy candidates. May be repeated for credit.  
 (Fall and spring—as arranged; summer 1967)

#### AMERICAN LITERATURE

##### FIRST GROUP

- †‡71-72 **Introduction to American Literature** (3-3) Cole and Staff  
 Historical survey. *First half:* from beginnings to the Civil War. *Second*  
*half:* from the Civil War to present. Prerequisite: English 1 or 1x.  
 (Academic year—day and evening; summer 1967)

\* Appointment effective September 1, 1967.

† See (\*) footnote on page 233.

‡ English 51-52, 71-72, 91-92; Classical Languages 71-72; French 51-52; German 51-52; Slavic 91-92 or 93-94; or Spanish 51-52 is prerequisite to all second group courses except English 171-72.



## SECOND GROUP\*

- †169 **Recent English and American Literature** (3)  
(Summer 1967)

170 **The American Short Story** (3) Coberly  
Historical development of the short story in America. (Summer 1967)

171-72 **Studies in American Literature** (3-3) McCandlish  
Major factors in the national cultural tradition as shown by outstanding writers. Prerequisite: English 51-52 or 71-72. (Academic year—day and evening)

173-74 **Major American Poets** (3-3) Ganz  
Advanced critical study of significant writers and movements. *First half:* from beginnings through 19th century. *Second half:* the 20th century. (Academic year—day; summer 1967—English 173)

175-76 **American Drama** (3-3) Cole  
Historical and critical study of significant plays and forms. *First half:* from beginnings to 1930. *Second half:* since 1930. (Academic year—day; summer 1967)

177-78 **The American Novel** (3-3) Coberly  
Historical and critical study of significant novels. *First half:* from beginnings through 19th century. *Second half:* 20th century. (Academic year—day)

179-80 **Proseminar in American Thought and Civilization** (3-3) Mondale  
For American Thought and Civilization majors. Readings, conferences, and group discussions. (Academic year—day and evening)

194 **History as a Literary Art** (3) McCandlish  
Literary study of American historians of the 19th century. (Spring—evening)

195 **Social Aspects of the New England Renaissance** (3) Mondale  
(Summer 1967)

## THIRD GROUP

270 **Seminar: the American Short Story** (3) Coberly  
(Not offered 1967-68)

271-72 **Seminar: American Thought** (3-3) Mondale  
Intensive consideration of specific periods and themes, primarily literary, in the history of American civilization. (Academic year—evening)

273-74 **Studies in American Poetry** (3-3) Ganz  
(Academic year—evening)

\* See (†) footnote on page 235.

† Offered in Summer Special Program in American Studies.



- 277-78 **Seminar: American Fiction** (3-3) Coberly  
(Not offered 1967-68)
- 279 **Research Methods and Bibliographical Materials** (3) Broderick  
To acquaint graduate students with the principal sources of bibliography  
and with typical problems in research. (Fall—evening)
- 280 **Studies in American Transcendentalism** (3) Broderick  
(Not offered 1967-68)
- 281-82 **Readings in American Civilization** (3-3) Walker  
Principal descriptive and interpretive works dealing with American civili-  
zation; emphasis on the interdisciplinary understanding of this subject.  
(Academic year—evening)
- 285-86 **Seminar: American Colonial Literature** (3) McCandlish  
(Not offered 1967-68)
- 287-88 **Readings in American Fiction** (3-3) Coberly  
Literature and the critical materials for which graduate students are re-  
sponsible on comprehensive and final examinations. (Academic year  
—evening)
- 289-90 **Thesis Research** (3-3) Staff

#### FOURTH GROUP

- 398 **Advanced Reading and Research** (arr.) Staff  
Limited to students preparing for the Doctor of Philosophy general exam-  
ination. May be repeated for credit. (Fall and spring—as arranged;  
summer 1967)
- 399 **Dissertation Research** (arr.) Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit.  
(Fall and spring—as arranged; summer 1967)

### Epidemiology and Environmental Health

Professor J.W. Millar (*Chairman*)

*Doctor of Philosophy field of study in Human Ecology.*—See pages 77-78, 79-80  
for requirements for the degree.

- 398 **Advanced Reading and Research** (arr.) Staff  
Limited to students preparing for the Doctor of Philosophy general exam-  
ination. May be repeated for credit. (Fall and spring—as arranged;  
summer 1967)
- 399 **Dissertation Research** (arr.) Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit.  
(Fall and spring—as arranged; summer 1967)



## Geography and Regional Science\*

Professorial Lecturer Simon Baker

Associate Professor P. J. Mika (Chairman)

Associate Professorial Lecturer Alice Andrews

Assistant Professor Subramaniam Moryadas

*Bachelor of Arts with a major in Geography (Departmental).*—Prerequisite: the Arts and Letters curriculum, page 63, including Geography 51, 52, Geology 1, and Statistics 91.

Required: in addition to the general requirements, pages 69–73, twenty-six semester hours of Geography beyond first-group courses, including Geography 103–4 and 105; twelve hours from Group A and three hours from Group B.

Group A: Geography 125, 126, 127, 132, 134, 141, 146. Group B: Geography 151, 153, 155, 161, 165, 166.

American Thought and Civilization 101 *American Civilization* is recommended as a senior-year elective for Geography majors.

*Master of Arts in the field of Geography.*—The general requirements, pages 77–79, including Geography 205–6, 299–300.

*Bachelor of Arts in Education with a teaching field in Geography.*—Prerequisite: the Education curriculum, pages 65–66.

Required: the Geography option and the professional courses listed on pages 96–97.

### FIRST GROUP

#### 51 Introduction to Geography (3)

Staff

Interrelated processes affecting the character of landforms, hydrography, soils, vegetation, and climate; relevance of their world patterns to man. (Fall—day; spring—evening; summer 1967)

#### 52 World Regions (3)

Moryadas

Survey of major countries, synthesis and analysis of major world regions. (Fall—evening; spring—day; summer 1967)

### SECOND GROUP

#### 103–4 Cartography (4–4)

Staff

A year course: credit given on completion of Geography 104. Exercises in graphic presentation and analysis of information compiled from various sources. Laboratory fee, \$11 a semester. (Academic year—evening)

#### 105 Weather and Climate (3)

Mika

(Formerly *Regional Climatology*)

Climatic elements and their controls, analysis of world climatic patterns. (Fall—day)

#### 125 Transportation Complexes (3)

Mika

World communications and transportation systems, interrelations between transportation and areal organization of man's activities. (Fall—day)

#### 126 World Economic Geography (3)

Moryadas

(Formerly *World Economies*)

World patterns and processes underlying the areal structure of selected economic activities. (Fall—day)

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



- 127 World Population and Settlement (3)** Staff  
Patterns of world population; factors contributing to population pressures, growth, and migrations. (Spring—day; summer 1967)
- 132 Natural Resources (3)** Staff  
Implications for society of the areal variations in natural resources and methods of resource use. (Not offered 1967–68)
- 134 Location of Industry (3)** Moryadas  
Structure of major world industries, location theory and locational requirements. (Spring—day)
- 141 Urban Settlement (3)** Staff  
Location, functions, and forms of cities; urban-rural relationships; urban problems and the history of their development. (Spring—day)
- 146 World Political Geography (3)** Staff  
Types and distributions of political systems, the major political units and associations of the world, factors which affect relative political power, areas of conflict and arbitration. (Fall—day; spring—evening)
- \*151 United States and Canada (3)** Staff  
(Formerly *United States*)  
(Not offered 1967–68)
- \*153 Western Europe (3)** Staff  
(Fall—day)
- \*155 Africa (3)** Staff  
(Not offered 1967–68)
- \*161 Latin America (3)** Staff  
(Spring—day)
- \*165 Asia (3)** Staff  
(Not offered 1967–68)
- \*166 Soviet Union and Eastern Europe (3)** Staff  
(Formerly *Soviet Union*)  
(Not offered 1967–68)

### THIRD GROUP

- 205-6 Introduction to Regional Science (3-3)** Moryadas  
(Formerly *Area Data Collection and Analysis*)  
A year course: credit given on completion of Geography 206. Theories of location, regional structures and sources of regional information, quantitative and qualitative techniques of analysis and synthesis. Prerequisite: Statistics 91 or equivalent. (Academic year—evening)

\* A regional survey course providing an introduction to more detailed study of geographic regions. Characteristics, interrelationships, and areal distributions of natural and cultural phenomena are considered. Prerequisite: Geography 51 or equivalent. Strongly recommended for students interested in the study of specific areas are the regional courses in the departments of Economics, History, and Political Science.



- 210 Seminar: Applied Economic Geography (3)** Staff  
Problems in analyzing area and site development potential; evaluating alternative locational possibilities for manufacturing, commercial, and service facilities. (Spring—evening)
- 221-22 Techniques of Resource Inventory (3-3)** Baker  
Methods used to measure and evaluate natural resource potential, case studies and development of inventory technology. (Academic year—evening)
- 223 Human Resources and Regional Development (3)** Staff  
Analysis of reciprocal relationship between population and natural resources. Evaluation of impact of regional development schemes upon population imbalance. (Fall—evening)
- 243 Urban Geography (3)** Staff  
Functional processes affecting the morphology, evolution, and areal arrangement of urban phenomena. (Fall—evening)
- 244 City Region (3)** Mika  
Town-country interrelationships, functional character and spatial structure of the urban sphere of influence. (Spring—evening)
- 265 Seminar: Geography of the Soviet Union (3)** Baclawski  
Physical features, economic geography, natural and energy resources, industries. Soviet transportation system, agriculture, multinational population trends; emphasis on population patterns along borderlands, especially Sino-Soviet border. (Fall—evening)
- 266 Seminar: Geography of China (3)** True  
Physical and economic geography; emerging industries, energy resources, transportation system. Emphasis on population "explosion"—its distribution and significance—and on regional geography, particularly on the Sino-Soviet border, Manchuria, Tibet, Mongolia, Inner Mongolia, and Sinkiang. (Spring—evening)
- 295 Research (3)** Staff  
May be repeated once for credit. (Fall and spring—as arranged)
- 299-300 Thesis Research (3-3)** Staff

## Geology\*

*Professors* Geza Teleki (*Chairman*), G.V. Carroll, Charles Milton (*Research*)  
*Adjunct Professors* J.W. Pierce, E.G. Kauffman  
*Professorial Lecturers* I.G. Sohn, Nicholas Hotton, Daniel Appleman  
*Associate Professors* L.B. Platt, F.R. Siegel, A.G. Coates  
*Associate Professorial Lecturer* W.E. Maloney  
*Instructor* George Rabchevsky  
*Lecturers* Frederick Collier, D.H. Massie

\* Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.



*Bachelor of Arts or Bachelor of Science with a major in Geology (Departmental).—*Prerequisite: the Arts and Letters or the Science curriculum, respectively, pages 63–64. The following first-group courses must be included: Geology 1–2, 14; Chemistry 11–12; Physics 1–2; Mathematics 21 (for the degree of Bachelor of Arts), Mathematics 22, or Statistics 91 (for the degree of Bachelor of Science).

Required: in addition to the general requirements, pages 69–73, twenty-four semester hours in Geology beyond first-group courses for the Bachelor of Arts degree; thirty, for the Bachelor of Science degree. The work of the junior and senior years must be approved by the Department. Two foreign languages are recommended for students planning to do graduate work. Philosophy 121 and 151 are recommended as senior-year electives.

*Master of Arts or Master of Science in the field of Geology.*—Prerequisite: the degree of Bachelor of Arts or Bachelor of Science, respectively, with a major in Geology from this University, or the equivalent.

Required: the general requirements, pages 77–79, including Mathematics 22 or Statistics 91, or equivalent, for the degree of Master of Science only. Candidates must pass the Master's Comprehensive Examination before registration for the second half of the thesis work. A reading knowledge examination in French, German, Russian, or Spanish (with permission of Department) must be passed before the second half of the work is started.

*Master of Science in the field of Geochemistry (an interdepartmental degree offered by the departments of Geology and Chemistry).*—Prerequisite: a Bachelor's degree with a major in Geology or in Chemistry from this University, or equivalent.

Required: the general requirements, pages 77–79, including Chemistry 111, 112; Geology 141, 241, 249, and Geology 245 or Chemistry 213. The Master's Comprehensive Examination must be taken before registration for the second half of the thesis work. A reading knowledge examination in German or Russian must be passed before the second half of the work is started.

*Doctor of Philosophy fields of study in Geology: Geomorphology, Marine Geology, Mineralogy, Paleontology, Petrology, Stratigraphy, and Structural Geology.*—See pages 77–78, 79–80 for requirements for the degree.

*Doctor of Philosophy field of study in Geochemistry (an interdepartmental field offered by the departments of Geology and Chemistry).*—See pages 77–78, 79–80 for requirements for the degree.

*Bachelor of Arts in Education with a teaching field in Earth Sciences.*—Prerequisite: the Education curriculum, pages 65–66.

Required: the Earth Sciences option and the professional courses listed on pages 96–97.

## FIRST GROUP

- 1–2 Introductory Geology (3–3)** Staff  
Lecture (2 hours), laboratory and field trip (2½ hours). Survey covering the principles of geology. Laboratory fee, \$10 a semester. (Academic year—day; summer 1967)
- 14 General Petrology (4)** Carroll  
Lecture (2 hours), laboratory and field trip (5 hours). Macroscopic study of rocks. Prerequisite: Geology 1–2 (concurrent registration for Geology 2 is accepted). Laboratory fee, \$10. (Spring—day)
- 91 Laboratory Techniques I (2)** Massie  
Introduction to photographic procedures and techniques. Laboratory fee, \$15. (Fall—Saturday morning)



**92 Laboratory Techniques II (2)**

Collier

Introduction to laboratory machinery and techniques, preparation of thin sections, grinding and polishing techniques, fossil preparation, organization and handling of collections. Laboratory fee, \$15. (Spring—Saturday morning)

**SECOND GROUP****101 History of Geological Sciences (3)**

Teleki

Development of geological and scientific thought; history of geological and related sciences. (Fall—day)

**111-12 Mineralogy (4-4)**

Carroll

A year course: credit given on completion of Geology 112. Lecture (2 hours), laboratory (5 hours). *First half*: morphological crystallography, paragenetic and systematic mineralogy. *Second half*: optical and petrographic mineralogy. Prerequisite: Geology 14 for geology majors, permission of instructor for other science students. Laboratory fee, \$12 a semester. (Academic year—day)

**113 Crystallography (3)**

Appleman

Lecture (2 hours), laboratory (3 hours). Point-group and space-group theory, fundamentals of crystal structure, elementary X-ray diffraction theory, application of X-ray diffraction to mineral identification. Prerequisite: Mathematics 22. Laboratory fee, \$15. (Fall—day)

**114 X-Ray Mineralogy (3)**

Lecture (2 hours), laboratory (3 hours). Single crystal techniques, space-group determination and mineral identification with the precession camera, principles of crystal structure analysis, crystallographic techniques in mineralogy, computer aided interpretation of diffraction data. Prerequisite: Geology 113. Laboratory fee, \$15. (Spring—day)

**115 Petrography (4)**

Carroll

Lecture (2 hours), laboratory (5 hours). Study of rocks by use of the polarizing microscope. Prerequisite: Chemistry 11-12, Geology 111-12. Laboratory fee, \$12. (Fall—day)

**122 Structural Geology (3)**

Platt

Lecture (2 hours), laboratory (2 hours), field trips as arranged. Genetic interpretation of geologic formations on basis of their structures, with emphasis on applications to geologic field work. Prerequisite: Geology 1-2. Laboratory fee, \$5. (Fall—day)

**125 Marine Geology (3)**

Pierce

Lecture and map work. Principles of oceanography and submarine geology; geology of the deep sea; topography, crustal structure, sedimentary processes, and marine environment. Prerequisite for geology majors: Geology 1-2; for students in fields other than geology, permission of instructor. (1968-69 and alternate years)

**128 Geomorphology (4)**

Teleki

Lecture (2 hours), laboratory (2 hours), field trips as arranged. Nature and evolution of earth forms, interpretation of maps and aerial photo-



graphs. Prerequisite: Geology 1-2, 101; or permission of instructor. (1968-69 and alternate years)

**141 Introductory Geochemistry (3)**

Siegel

Lecture (2 hours), laboratory as arranged. Principles and theories on the abundance, relationships, and distribution of the elements in various rock and mineral species. Prerequisite: Chemistry 11-12, Mathematics 21, Physics 1-2. Laboratory fee, \$12. (Fall—day)

**151-52 Invertebrate Paleontology (3-3)**

Coates

Lecture (2 hours), laboratory (3 hours), field trips as arranged. Classification and evolution of fossil invertebrates, paleoecology of invertebrate organisms. Prerequisite: Geology 1-2. Laboratory fee, \$12 a semester. (Academic year—evening)

**154 Vertebrate Paleontology (3)**

Hotton

Lecture (2 hours), laboratory or field as arranged. General features of vertebrate morphology and evolution as illustrated by the fossil record; problems of paleoecology and adaptation, where appropriate. (Fall—evening)

**157 Methods in Paleontology (3)**

Sohn

Introduction to principles and techniques of paleontological research, including rules of zoological nomenclature. Prerequisite: Geology 151-52. (1967-68 and alternate years: fall—evening)

**163 Sedimentation (4)**

Pierce

Lecture (2 hours), laboratory (4 hours). Principles of sedimentation, analysis and interpretation of sedimentary processes and environment, laboratory experiments in the properties of sedimentary particles. Laboratory fee, \$15. (1967-68 and alternate years: fall—evening)

**166 Principles of Stratigraphy (4)**

Staff

Lecture (2 hours), laboratory (4 hours). Introduction to physical and biological stratigraphy. Prerequisite: Geology 151-52. (Spring—day)

**172 Regional Geology (3)**

Staff

Lecture, research, and discussion of a major geologic or physiographic region of North America or of another continent. Prerequisite: Geology 122. (Spring—day; summer 1967)

**181 Oceanography I (3)**

Maloney

Chemical and physical properties of sea water, movements of water masses, meteorological interrelations, ecology of marine plants and animals. Prerequisite: Mathematics 23 or equivalent, or permission of instructor. (Fall—evening)

**182 Oceanography II (3)**

Maloney

Boundary processes and interactions between sea water and the atmosphere, principles of dynamics and their application to motion and distribution of variables, acoustics of water masses, review of recent literature and problems. Prerequisite: Geology 181. (Spring—evening)



## THIRD GROUP

- 202 **Geometrics** (3) Pierce  
Application of statistics to geological and paleontological problems, quantitative and mathematical approach. Prerequisite: Mathematics 23 or permission of instructor. Laboratory fee, \$10. (Spring—day)
- 205 **Seminar in Geology** (3) Staff  
Special topics each semester. May be repeated for credit. (Fall and spring—as arranged)
- 213 **Advanced X-ray Crystallography** (3) Appleman  
Problems in X-ray crystallography, crystal structure analysis of minerals. Laboratory fee, \$15. (1968–69 and alternate years)
- 214 **Advanced X-ray Mineralogy** (3)  
Problems in X-ray mineralogy, crystal chemistry of rock forming minerals. Laboratory fee, \$15. (1968–69 and alternate years)
- 216 **Sedimentary Petrography** (4) Staff  
Mineralogy and chemistry of sediments and sedimentary rocks; identification, description, and classification of sedimentary rocks with megascopic and microscopic methods. Laboratory fee, \$10. (Spring—day)
- 218 **Seminar: Igneous and Metamorphic Petrology** (2) Carroll  
Independent topics each semester; may be repeated for credit. (Spring—evening)
- 223 **Experimental and Theoretical Deformation** (3) Platt  
Lectures and field trips as arranged. Experimental deformation of natural materials and theoretical analysis of the natural deformation of rocks. Prerequisite: Geology 122; Mathematics 23, 24; or permission of instructor. (1968–69 and alternate years)
- 224 **Advanced Structural Geology** (3) Platt  
Methods of study and the hypotheses of the genesis of structurally complex rocks. Problems of orogeny. (Spring—day)
- 227 **Coastal Morphology** (3) Teleki  
Morphological analysis of the features and processes of coastal zones. Survey of the coastal-zone types of the world. (1969–70 and alternate years)
- 241 **Geochemistry** (3) Siegel  
Chemical composition and physical properties of sea water, chemical composition and alterations of marine sediments, thermodynamics and biochemical activity in oceans. Methods of analysis and problems of measuring. Prerequisite: Mathematics 22, Physics 51–52. Chemistry 22 is desirable. Laboratory fee, \$18. (Spring—day)
- 242 **Experimental Geochemistry** (3) Siegel  
Recent advances in geochemistry, instrumental methods and their application. Special topics. Does not repeat itself and can be repeated for credit. Prerequisite: Chemistry 111, 112. (Spring—as arranged)



**245 Thermodynamics for the Geologist (2)** Staff

Nature and definition of thermodynamics and the meaning of chemical equilibrium. Methods of graphical portrayal, significance and calculation in equilibrational relations and systems. Prerequisite: Mathematics 22. Mathematics 23 and Physics 51-52 are desirable. (Fall—evening)

**246 Physical Chemistry in Relation to Geologic Problems (2)** Staff

The origin of the atmosphere, equilibria in sea water, diagenesis, equilibrium in metamorphic rocks, composition and temperature-pressure relations in ore solutions, and the mechanism of ore formation; thermodynamics of magma. Prerequisite: Geology 245. (1968-69 and alternate years)

**249 Seminar: Geochemistry (2)** Siegel

Independent topics each semester; may be repeated for credit. (Fall and spring—as arranged)

**251-52 Micropaleontology (4-4)** Sohn

A year course: credit given on completion of Geology 252. Lecture (2 hours), laboratory as arranged. Identification with binocular microscope of Ostracoda and other fossil microorganisms. Micropaleontological techniques, paleontological research methods, taxonomy, and paleoecology. Laboratory fee, \$12 a semester. (1968-69 and alternate years)

**257 Seminar: Paleontology and Paleoecology (3)** Staff

Independent topics each semester; may be repeated for credit. (Fall and spring—as arranged)

**267 Seminar: Stratigraphy (3)** Staff

Independent topics each semester; may be repeated for credit. (Fall and spring—as arranged)

**295 Research (arr.)** Staff

Research on problems approved by the Staff. Open to qualified students with advanced training. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

**299-300 Thesis Research (3-3)** Staff

(Academic year—as arranged; summer 1967)

**FOURTH GROUP****398 Advanced Reading and Research (arr.)** Staff

Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—day and evening; summer 1967)

**399 Dissertation Research (arr.)** Staff

Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)



## Germanic Languages and Literatures\*

Professors W.K. Legner, J.C. King (Chairman)

Associate Professor Klaus Thoenelt

Assistant Professors Carl Steiner, L.G. Seeger

Lecturers Blanche Gardner, Lucie Kressley

*Bachelor of Arts with a major in Germanic Languages and Literatures (Departmental).*—Prerequisite: the Arts and Letters curriculum, page 63, including German 9–10 and 51–52.

Required: in addition to the general requirements, pages 69–73, a minimum of twenty semester hours in German courses above the first group, including German 179–80; reasonable proficiency in speaking and writing German; History 39–40 or equivalent; six semester hours in Philosophy selected with the approval of the adviser. Majors in German are strongly advised to study French.

*Master of Arts in Germanic Languages and Literatures.*—Prerequisite: a Bachelor of Arts degree with a major in Germanic Languages and Literatures from this University, or equivalent.

Required: the general requirements, pages 77–79, including a reading knowledge of French and a thesis in the field of German literature or linguistics.

*Master of Arts in the field of Linguistics (an interdepartmental degree offered by the departments of Germanic Languages and Literatures, Romance Languages and Literatures, and Slavic and Oriental Languages and Literatures).*—Prerequisite: a Bachelor of Arts degree, preferably with a major in French, German, Russian, or Spanish at this University, or the equivalent, and the approval of candidacy by the Committee on Linguistic Study.

Required: the general requirements, pages 77–79, including a thesis and twenty-four semester hours of second- and third-group courses selected in consultation with the chairman of the department directing the Master's program and approved by the Committee on Linguistic Study. The candidate's program will normally be selected from courses in Anthropology, Chinese, English, French, General Courses in Romance Languages and Literatures, German, Mathematics, Philosophy, Psychology, Slavic, Spanish, and Speech listed on pages 267–69.

*Doctor of Philosophy fields of study in Germanic Languages and Literatures: Old High German Language and Literature, Old Norse Language and Literature, Middle High German Language and Literature, Early New High German Language and Literature, Classicism, Romanticism, Realism, 20th Century German Literature, and Linguistic Analysis.*—See pages 77–78, 79–80, for requirements for the degree.

*Bachelor of Arts in Education with a teaching field in German.*—Prerequisite: the Education curriculum, pages 65–66.

Required: the German option and the professional courses listed on pages 96–97.

### FIRST GROUP

#### 1–2 First-year German (3–3)

A year course: credit given on completion of German 2. Essentials of German grammar; translation of easy prose. Three classroom periods a week plus one period of aural-oral practice in language laboratory. Laboratory fee, \$17.50 a semester. (First half: fall—day and evening; spring—day; summer 1967. Second half: fall—day; spring—day and evening; summer 1967.)

\* A standardized placement examination given before registration is required of all entering students who wish to continue in college the language begun in high school. Upon completion of the examination assignment is made to the appropriate course, with credit assigned on the usual basis.  
Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



**\*3-4 Second-year German (3-3)**

Staff

A year course: credit given on completion of German 4. Selections from modern German prose; continuation and review of grammar. Three classroom periods a week plus one period of aural-oral practice in language laboratory. Laboratory fee, \$17.50 a semester. Prerequisite: German 1-2 or two years of high school German. (*First half: fall—day and evening; spring—day; summer 1967. Second half: fall—day; spring—day and evening; summer 1967.*)

**\*9-10 German Conversation and Composition (3-3)**

Steiner, Thoenelt

(Academic year—day)

**47 Beginning German for Reading Examination Candidates (0)**

Staff

Specifically for graduate students with little or no German, who are preparing for reading examinations. No academic credit. Tuition fee, \$171. (Fall and spring—evening; summer 1967)

**49 German Readings for Nonmajor Students (3)**

Staff

Primarily for graduate students preparing for reading examinations. Undergraduates admitted with permission of instructor. No academic credit for graduate students. Prerequisite: German 4 or 47, or equivalent. (Fall and spring—evening; summer 1967)

**\*51-52 Introduction to German Literature (3-3)**

Seeger

Prerequisite: German 4 or equivalent. (Academic year—evening)

**SECOND GROUP****103-4 Goethe's "Faust"—Parts I and II (3-3)**

Legner

(1969-70 and alternate years)

**131-32 18th Century German Literature (3-3)**

Thoenelt

Enlightenment, Storm and Stress, Classicism. (1967-68 and alternate years; academic year—day)

**141-42 19th Century German Literature (3-3)**

King

Romanticism, Biedermeier, Young Germany, Realism. (1968-69 and alternate years)

**151-52 20th Century German Literature (3-3)**

Seeger

(1968-69 and alternate years)

**161-62 Special Readings in German Literature for Majors (3-3)**

Legner, King

Independent study only. (Academic year—as arranged)

**179-80 Advanced Composition (1-1)**

King, Legner

For undergraduate and graduate majors. (Academic year—day)

**THIRD GROUP****201-2 Middle High German (3-3)**

Legner

(1967-68 and alternate years; academic year—day)

\* With permission of instructor, German 9-10 or 51-52 may be undertaken concurrently with German 4.



- 205-6 **Gothic** (3-3) Legner  
(Not offered 1967-68)
- 209-10 **Old High German** (3-3) King  
(1968-69 and alternate years)
- 213-14 **Old Norse** (3-3) Allee  
(1967-68 and alternate years: academic year—evening)
- 223-24 **Linguistic Analysis of Modern German** (3-3) King  
(Not offered 1967-68)  
Treatment of phonetics, phonemics, morphology, and syntax.
- 225-26 **Seminar: Linguistics** (3-3) King, Allee  
(1968-69 and every third year)  
Bibliography, methodology, readings, and research problems.
- 227-28 **Sanskrit—Introduction to Indo-European Linguistics** (3-3) King  
Old Indic language and literature. (Academic year—evening)
- 229 **15th and 16th Century German Literature** (3) Legner  
(1968-69 and alternate years)  
Transition from chivalric to bourgeois literature. The eras of Humanism and the Reformation as reflected in the principal literary works.
- 230 **17th Century German Literature** (3) Legner  
The beginnings of realism in the novel. Pietism. (1968-69 and alternate years)
- 231-32 **German Classicism** (3-3) Thoenelt  
Advanced study and critique of the classical literature of the Goethe era. Prerequisite: German 131-32 or equivalent. (1968-69 and alternate years)
- 241-42 **Seminar: German Romanticism** (3-3) Thoenelt  
Treatment of individual writers, groups, motifs, and tendencies. (1967-68 and alternate years: academic year—evening)
- 251-52 **Seminar: Studies in 20th Century German Literature** (3-3) Seeger  
(1967-68 and alternate years: academic year—evening)  
Special projects in fiction, drama, poetry, and criticism.
- 271-72 **Seminar: German Literature** (3-3) Staff  
(Not offered 1967-68)  
Bibliography, methodology, readings, and research problems.
- 299-300 **Thesis Research** (3-3) Staff  
(Academic year—as arranged)  
Required of all candidates for the Master's degree in German.



## FOURTH GROUP

- 398 **Advanced Reading and Research** (arr.) Staff  
 Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged)
- 399 **Dissertation Research** (arr.) Staff  
 Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged)

## Greek

See "Classical Languages and Literatures."

## Health Care Administration\*

Professors F.H. Gibbs, Leon Gintzig (*Chairman*)  
 Professorial Lecturers Clark Tibbitts, C.U. Letourneau, M.J. Taves  
 Associate Professor E.W. Camp  
 Assistant Professors R.F. Jacobsen, F.S. Rojo, Frank Puntteney, Jr.  
 Assistant Professorial Lecturers Marjorie Quandt, W.A. Parker, G.E. Morris  
 Lecturer Sarah Plummer

*Master of Business Administration or Master of Public Administration in Health Care Administration fields (Hospital Administration, Administration of Long-term Care Facilities, Health Records Administration).—See pages 121–24, 124–27.*

*Graduate Certificate in Health Care Administration.—See page 131.*

*Doctor of Business Administration in the field of Health Care Administration.—See pages 131–33.*

## THIRD GROUP

- 202 **Introduction to Health Care Administration** (3) Parker  
 Lecture and discussion (2 hours), laboratory (2 hours). Survey of state, national, and community health services; includes medical terminology, communicable diseases, environmental sanitation, and biostatistics. (Fall—day and evening)
- 203 **Organization and Management** (3) Gintzig, Puntteney  
 Lecture and discussion (2 hours), laboratory (2 hours). History and current character of institutional health care. Organizational functions and structure of various kinds of facilities related to health care administration. Prerequisite or concurrent registration: Business and Public Administration 201. (Fall—day and evening)
- 204 **Planning and Support Agencies and Associations** (3) Gintzig  
 Functions performed and special support techniques of hospital, medical, public health, nursing home, planning, educational, and similar associations. (Fall or spring—as arranged)

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



- 205 Hospital Management Procedures (3)** Letourneau, Puntenney  
Lecture and discussion (2 hours), laboratory (2 hours). Departmental administration. Survey of hospital law; hospital forms, procedures, and systems; and hospital programs pertaining to disaster relief, safety, fire prevention. (Fall—as arranged; spring—day)
- 206 Case Studies in Health Care Administration (3)** Gibbs  
Discussion (2 hours), laboratory (2 hours). General ideas about administration applied to practical cases. Emphasis on policy making, planning, controlling, and organizing. Prerequisite: Business and Public Administration 201 and Health Care Administration 203. (Spring—day)
- 207 Management Analysis in Health Care Institutions (3)** Gintzig  
Lecture (2 hours), laboratory (2 hours). Basic investigation and problem-solving techniques, including various methods of collecting, analyzing, reporting, and using information that can be made available to administrators of hospitals and other medical care institutions. (Fall—as arranged)
- 209 Health Care Economics (3)**  
Lecture (2 hours), laboratory (2 hours). Characteristics of the consumers and providers of health care, health prepayment and insurance programs, impact of social and economic factors on the health care institution. (Fall—day; spring—day and evening)
- 212 Planning and Constructing Health Care Facilities (3)**  
Lecture (2 hours), laboratory (2 hours). Regional and specific aspects of long- and short-term health care planning, designing, constructing, purchasing, equipping, and supplying. Prerequisite: Health Care Administration 202 and 203. (Spring—day)
- 213 Administration of Health Care Systems (3)** Gintzig  
Various patterns of hospital and health care such as church ownership, proprietary, group practice, Salvation Army, governmental, industrial, unions, nursing homes, community, and their special characteristics. (Fall or spring—as arranged)
- 221-22 Medical Science and Medical Terminology (3-3)** Quandt  
Fundamentals of medical science and medical essentials. Includes a study of terms related to all areas of medical science, hospital service, and the paramedical specialties. (Academic year—evening)
- 223-24 Introduction to Health Records Administration (3-3)** Quandt  
Lecture and discussion (2 hours), laboratory (2 hours). History of medical records, report preparation, coding and indexing procedures, ethics, methods of securing and preserving medical records, and medical record practices and procedures. (Academic year—evening)
- 225-26 Health Records Administration (3-3)** Staff  
Lecture and discussion (2 hours), laboratory (2 hours). Research techniques and qualitative analysis and ethics pertaining to medical records. Problems encountered in medical record departments in medical facilities. (Academic year—evening)



- 229 Health Records Administration Internship (3)** Staff  
Four-month internship in approved medical facilities under qualified medical records administrators who provide practical experience and practice in the use of their standard equipment.
- 250 Administration for Mental Care (3)** Staff  
Special characteristics of administration required in mental hospitals, psychiatric sections of general hospitals, mental health clinics, and others. (As arranged)
- 253-54 Survey of Health Care Organization and Procedures (3-3)**  
(Formerly *Health Care Administration* 153-54)  
Primarily for students who wish an over-all knowledge of organization and procedures used in health care policies, hospitals, and long-term care facilities. Not open to Master's candidates in Health Care Administration. Students wishing to take the course for credit must take additional work. (Academic year—evening)
- 260 Administration for Long-term Care Facilities (3)** Rojo  
Survey of medical and nursing procedures designed for administrators of long-term care facilities including nursing homes and facilities for the aged. (Fall—day)
- 261 Business Procedures for Long-term Care Facilities (3)** Rojo  
Special application to administration of facilities for long-term care, including nursing homes and homes for the aged. (Spring—evening)
- 265-66 Readings in Long-term Care Administration (3-3)** Staff  
Advanced studies in selected aspects of administration of long-term care facilities, including nursing homes, homes for the aged, and others. (As arranged)
- 267 Social Gerontology for the Administrator (3)** Tibbitts, Taves  
Special characteristics of the elderly with which administrators of long-term care facilities should be acquainted. (Fall—day and evening)
- 270 Research in Health Care Administration (3)** Staff  
Field research. Primarily for doctoral candidates; open to other graduate students with consent of instructor. (Fall or spring—as arranged; summer 1967)
- 285-86 Readings in Health Care Administration (3-3)** Staff  
Supervised readings in some special areas or subdivisions of health care administration. Primarily for doctoral candidates; open to other students by arrangement. (Academic year—as arranged; summer 1967—*Health Care Administration* 286)
- 287 Seminar: Integration of Health Care Administration (3)** Staff  
Primarily for doctoral candidates; open to other students by arrangement. (Fall or spring—as arranged)
- 288 Seminar: Field Problem Studies in Health Care Administration (3)** Staff  
Selected administrative issues and problems arising in health care facility situations. (Fall or spring—as arranged)



293-94

-95 **Residency I** (3-3-3)

Gibbs, Gintzig, Puntenney, Rojo

Twelve-month residency, beginning each year June 1 or July 1. Work experience under a qualified preceptor, periodic written progress reports, and a written major report.

296-97

-98 **Residency II** (3-3-3)

Gibbs

For selected students who take a second twelve-month residency; begins June 1 or July 1 each year.

299-300 **Thesis Research** (3-3)

Staff

**FOURTH GROUP**398 **Advanced Reading and Research** (arr.)

Staff

Limited to doctoral students preparing for the general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

399 **Dissertation Research** (arr.)

Staff

Limited to doctoral candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

**Hebrew**

See "Classical Languages and Literatures."

**History\***

*Professors* E.L. Kayser, Wood Gray, H.M. Merriman, R.H. Davison, R.B. Thompson, R.C. Haskett, R.P. Sharkey (*Chairman*), Mario Rodriguez

*Professorial Lecturer* R.P. Multhaupt

*Associate Professors* C.J. Herber, R.W. Kenny, H.M. Sachar, P.P. Hill, W.R. Johnson

*Associate Professorial Lecturer* R.B. Simons

*Assistant Professors* Lois Schwoerer, A.D. Andrews II, R.A. Hadley, Linda DePauw

*Bachelor of Arts with a major in History (Field-of-Study).*—Prerequisite: the Arts and Letters curriculum, page 63, including History 39-40 and 71-72.

Required: the general requirements, pages 69-73, and the passing of the History major examination at the end of the senior year.

The major, and the major examination which attests it, is centered on the study of the Mediterranean rise, European development, and trans-Atlantic spread of Western Civilization, its interaction with other civilizations in a world context, and its continuing challenges to the present day. Under the guidance of an adviser the student will arrange his program in History to attain, insofar as possible, a balanced evaluation of (1) the rise of civilization in Europe from its Classical origins to the eve of the French Revolution; (2) the historic problems of modern Europe in the age of industry and ideology since 1789; (3) the political, social, economic, and cultural forces of the United States in their world setting since 1607; and (4) the nature and

\* Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.



development of civilization in the principal areas outside of the North Atlantic community. A six-hour research seminar to give training in fundamental techniques is a required part of each major's program and a proseminar (History 199-200) is offered as a means of integrating the student's understanding of the continuity of Western civilization in its world context. For details relating to the administration and content of the major, see the pamphlet on this subject which is available in the offices of the Dean of Columbian College of Arts and Sciences and the Chairman of the Department of History.

American Thought and Civilization 101 *American Civilization* is recommended as a senior-year elective for History majors.

*Bachelor of Arts with a major in Latin American Civilization (Field-of-Study).*—Prerequisite: the Arts and Letters curriculum, see page 63.

Required: the general requirements, pages 69-73, and the passing of the Latin American Civilization major examination at the end of the senior year. The coordinated field of knowledge upon which the student will be examined includes political and social history, economic development, governmental structures and international relations, and the principal literary works and writers of the Latin American republics. The Department of History provides a proseminar (History 197-98) intended to assist the student in preparing himself for the major examination. For further details, see the pamphlet, which is available in the Office of the Dean of Columbian College of Arts and Sciences.

*Master of Arts in the field of History.*—Prerequisite: the degree of Bachelor of Arts with a major in History (high B average or better) from this University, or the equivalent, and the approval of the Department. Applicants from other institutions must present scores on the Graduate Record Examination with the Advanced Test in History and arrange for at least two of their former professors to write letters of evaluation to the Chairman of the Department of History.

Required: the general requirements, pages 77-79. Of the twenty-four semester hours of required second- and third-group courses (exclusive of the thesis), at least six must be in third- or fourth-group history courses; a maximum of six may be in a closely related field outside the Department of History as approved by the Department. Master's candidates are responsible for arranging with instructors of second-group courses for extra work, in order to receive graduate credit for such courses.

*Master of Arts in the field of Latin American Civilization.*—Prerequisite: the degree of Bachelor of Arts with a major in Latin American Civilization from this University, or the equivalent.

Required: the general requirements, pages 77-79. Course work and the comprehensive examinations will embrace political and social history, governmental structures and international relations, economic development, and principal literary works of Latin America. The thesis may be written in any one of these four fields. All courses must be approved in advance by the Adviser.

*Doctor of Philosophy fields of study in History:* (1) *American History (Colonial, Early National, Political, Diplomatic, Economic, Social)*, (2) *European History (Classical Greek and Roman, Medieval, Early Modern, Modern, Economic, Diplomatic, English, French, German, Russian, Balkan, Iberian)*, (3) *Latin American History (Colonial, National, Central American, Brazilian)*, (4) *Asian History (Near Eastern, Modern Chinese, Modern Japanese)*, (5) *Canadian History*, (6) *Jewish History*, and (7) *History of Science*.—See pages 77-78, 79-80 for requirements for the degree.

*Doctor of Philosophy fields of study in American Thought and Culture.*—See page 165.

*Doctor of Philosophy fields of study in International Relations* combine work in Economics, History, and Political Science.

*Bachelor of Arts in Education with a teaching field in History.*—Prerequisite: the Education curriculum, pages 65-66.

Required: the History option and the professional courses listed on pages 96-97.



## FIRST GROUP

39-40 **European Civilization in Its World Context** (3-3)

Staff

Primarily for freshmen. *First half*: political, social, economic, and cultural history from ancient times to 1715. *Second half*: 1715 to present. Students cannot receive credit for both History 39-40 and 91-92. (Academic year—day and evening; summer 1967)

71-72 **Civilization of the United States** (3-3)

Staff

Primarily for sophomores. *First half*: political, social, economic, and cultural forces of the United States in their world setting from 1492 to 1865. *Second half*: 1865 to the present. (Academic year—day and evening; summer 1967)

91-92 **World Civilizations** (3-3)

Thompson

*First half*: major civilizations of the world to 1500. *Second half*: Eurocentric and world civilization since 1500. Students cannot receive credit for both History 39-40 and 91-92. (Not offered 1967-68)

## SECOND GROUP\*

105-6 **History of Science** (3-3)

Multhauf

*First half*: ancient natural philosophy and growth of special sciences through the 17th-18th century scientific revolution. *Second half*: scientific development from the mid-18th century to the scientific revolution of the early 20th century. Prerequisite: History 39-40 or a background in science. (Academic year—evening)

109-10 **Ancient History** (3-3)

Hadley

Political, social, and intellectual aspects. *First half*: the ancient Near East and Greece. *Second half*: Rome. (Academic year—day; summer 1967—History 109)

111-12 **Medieval History** (3-3)

Andrews

Political, social, and intellectual aspects. *First half*: 4th to 11th centuries. *Second half*: 11th to 14th centuries. (Academic year—day; summer 1967—History 112)

121 **The Renaissance in Western Europe** (3)

Schwoerer

Political, economic, intellectual, and cultural features of the Renaissance, 14th-16th centuries. Focus on Italy, but with attention to developments in France and England. (Fall—day)

130 **Nationalism** (3)

Historical evolution of modern nationalism. (Not offered 1967-68)

131-32 **History of Germany** (3-3)

Herber

Political, social, and cultural development. *First half*: Reformation to 1871. *Second half*: 1871 to the present. (Academic year—day)

\* History 39-40 is prerequisite to courses 109 through 152 and 187 through 196; History 71-72, to courses 170 through 184; either 39-40 or 71-72, to courses 162 through 166. Prerequisite to History 105-6 is either History 39-40 or a background in a science.



- 137 **History of Soviet Foreign Policy** (3) Elliott  
Russian foreign policy since 1917. Continuity between Tsarist and Soviet foreign policy, relation between state diplomacy and communist ideologies, disarmament, international organizations, etc. (Fall—day; summer 1967)
- 139–40 **World History in the 20th Century** (3) Sachar  
*First half:* 1914 to the Munich settlement of 1939. *Second half:* Munich to the present. (Academic year—day)
- 141–42 **History of France** (3–3) Herber  
Political, social, and cultural. *First half:* from earliest times to 1815. *Second half:* 1815 to the present. (Academic year—day)
- 145–46 **History of Russia** (3–3) Thompson  
Rise and revolution of Russia. *First half:* the Old Regime, 860–1900. *Second half:* Revolution and Soviet rule, 1900–1960. (Academic year—day)
- \*147 **Economic History of Europe** (3) Sharkey  
Economic development since the Middle Ages; emphasis on the period following the Industrial Revolution. Evolution of capitalism and its impact upon the societies of Europe. (Fall—day)
- 149–50 **European Diplomatic History** (3–3) Davison  
The European state system; diplomatic practices and relations since the Congress of Vienna; emphasis on policies and actions of the great powers and their statesmen. *First half:* to 1890. *Second half:* since 1890. Students cannot receive credit for both History 150 and 153. (Academic year—day)
- 151–52 **History of England and Great Britain** (3–3) Kenny  
Development of English civilization and its impact on Western culture. *First half:* to 1689. *Second half:* since 1689. (Academic year—day)
- 153 **20th Century European Diplomatic History** (3) Sachar  
The main currents, with necessary 19th century background. Students cannot receive credit for both History 153 and 150. (Fall—day)
- 154 **Modern Jewish History** (3) Sachar  
A secular history of the Jewish people from the 18th century to the present state of Israel, with particular emphasis on European political and economic influences. (Spring—day)
- 162 **History of Spain and Portugal** (3) Rodriguez  
Political, social, and cultural aspects. (Fall—day)
- 163–64 **History of Latin America** (3–3) Rodriguez  
Political, social, and cultural development. *First half:* through independence. *Second half:* the national period. (Academic year—day; summer 1967—History 164)

\* An interdepartmental course offered by the departments of History and Economics. Students may register in either department.



- 165 History of Brazil (3)** Rodriguez  
Political, social, and cultural aspects. (Spring—day)
- 166 History of Mexico (3)**  
(Fall—day)
- 170 American Colonial History (3)** Haskett  
Settlement of colonies, development of provincial institutions, and emergence of American civilization in the 17th and 18th centuries. (Spring—day)
- 171-72 U. S. Social History (3-3)** Gray  
Daily life, institutions, intellectual and artistic achievements of the Agrarian Era, 1607-1861; the Urban-Industrial Era, 1861 to the present. (Academic year—day)
- 173 Representative Americans (3)** Gray  
Significant and pivotal personalities in government, business, science, religion, journalism, the arts, and social reform. (Fall—day; summer 1967)
- 175-76 U. S. Political History (3-3)** Haskett  
*First half:* to the Civil War. *Second half:* Civil War to New Deal. (Academic year—day; summer 1967—History 175)
- 177 The South (3)**  
Rise of the plantation system and slavery; intersectional conflict; problems and progress of the New South. (Not offered 1967-68)
- 178 The Civil War (3)**  
Causative factors leading to Civil War; social, political, military, economic, and diplomatic aspects of the War; immediate and long-range effects on American life. (Not offered 1967-68)
- \*179-80 U. S. Economic History (3-3)** Sharkey  
Process of economic growth from Colonial times to the present. Development of various sectors in the economy—such as agriculture, transportation, manufacturing, and banking—and their interdependence. *First half:* 1607-1865. *Second half:* 1865 to present. (Academic year—evening)
- 181-82 U. S. Diplomatic History (3-3)** Merriman, Hill  
Tendencies toward isolation, expansion, and collectivism; disputes with foreign countries and their settlement; activities of American secretaries of state and diplomatic agents. *First half:* to 1898. *Second half:* since 1898. (Academic year—day and evening; summer 1967—History 182)
- 183 Oversea Expansion of the United States (3)** Merriman  
Political, economic, social, and cultural life of our outlying possessions. (Spring—day)
- 184 Canada and the United States (3)** Merriman  
Historical background and main trends in the relationship of the two English-speaking peoples of North America. (1968-69 and alternate years)

\* Interdepartmental course offered by departments of History and Economics. Students may register in either department.



- 187 **History of Modern China** (3) Johnson  
China since 1840, particular attention to political developments. (Fall—day)
- 189 **History of India** (3) Thompson  
Civilization of India and her neighbors from the beginnings to independence. (Not offered 1967-68)
- 193 **History of the Near East** (3) Davison  
Byzantine, Arab, Persian, and Islamic backgrounds; rise and decline of the Ottoman Empire; action of European powers in the area; Ottoman breakup into the Turkish Republic and other successor states. (Fall—day)
- 195-96 **History of East Asia** (3-3) Johnson  
Civilizations of China and Japan; emphasis on cultural development and social organization. *First half*: beginnings to about 1800. *Second half*: traditional societies on the eve of the modern era, their responses to Western cultural influences since mid-19th century. (Academic year—day)
- 197-98 **Proseminar: Latin American Civilization** (3-3)  
Readings for coordination and review. Open only to majors in Latin American Civilization. (Academic year—as arranged)
- 199-200 **Proseminar: Readings for the History Major** (3-3) Staff  
Limited to senior history majors. Readings and discussions on major trends in the history of Western civilization in their world setting; representative selections from the classics of historical literature. Students cannot receive credit for both History 199-200 and 201-2. (Academic year—day and evening)
- THIRD GROUP\***
- 201-2 **History and Historians** (3-3) Staff  
Students cannot receive credit for both History 201-2 and 199-200. (Academic year—as arranged)
- 203-4 **Research Seminar** (3-3) Staff  
Prerequisite: Departmental approval. (Academic year—as arranged; summer 1967)
- †205-6 **Seminar: Modern History of Eastern Europe** (3-3) Petrov  
East Central and Southeastern Europe in the 19th and 20th centuries. *First half*: to the mid-1930's. *Second half*: to the communist take-over (1948). (Academic year—day)
- †207 **Seminar: Communist Party of the Soviet Union** (3) Ploss  
Evolution of the communist movement of the Soviet Union. Comintern, Cominform, and other fundamentals of international communist organization. Selected case studies of individual congresses of the CPSU. (Spring—day)

\* Prerequisite to all third- and fourth-group courses: the appropriate second-group preparation and consent of instructor.  
† Primarily for students in the Institute for Sino-Soviet Studies.



- \*208 Seminar: History of the Comintern (3)** Thornton  
The Communist Third International: its sponsorship of revolution, its decline, its subservience to the Soviet State. (Fall—evening)
- 209–10 Research Seminar: Ancient History (3–3)** Hadley  
Prerequisite: History 109–10 or equivalent. (Academic year—evening)
- 211–12 Research Seminar: Medieval History (3–3)** Andrews  
Prerequisite: History 111–12 or equivalent. (Academic year—day)
- 241–42 Research Seminar: Modern European History (3–3)** Herber  
Prerequisite: appropriate preparation and consent of instructor. (Academic year—evening)
- 245–46 Research Seminar: Russia and Europe (3–3)** Thompson  
Prerequisite: History 145–46 or equivalent. (First half: fall—day; summer 1967. Second half: not offered 1967–68.)
- 249–50 Research Seminar: European Diplomatic History (3–3)** Davison  
Prerequisite: History 149 or 150, or equivalent. Reading knowledge of French or German required. (First half: fall—day. Second half: not offered 1967–68.)
- 251–52 Research Seminar: English History (3–3)** Kenny, Schwoerer  
Prerequisite: History 151–52 or equivalent. (Academic year—day)
- 261–62 Research Seminar: Latin American History (3–3)** Rodriguez  
Prerequisite: 6 semester hours selected from History 162, 163–64, 165, 166. (Academic year—day; summer 1967—History 262)
- 271–72 Research Seminar: U. S. Social History (3–3)** Gray  
Prerequisite: History 171–72 or equivalent. (First half: not offered 1967–68. Second half: spring—day.)
- 275–76 Research Seminar: U. S. Political History (3–3)** Haskett  
Prerequisite: History 175–76 or equivalent. (Academic year—day; summer 1967—History 275)
- 281–82 Research Seminar: U. S. Diplomatic History (3–3)** Merriman  
Prerequisite: History 181–82 or equivalent. (Academic year—day)
- 283–84 Research Seminar: Recent U.S. History (3–3)** Hill, DePauw  
Prerequisite: History 181–82 or equivalent. (Academic year—day)
- 285–86 Research Seminar: U. S. Early National Period (3–3)** De Pauw, Hill  
Prerequisite: History 175 or 181, or equivalent. (Academic year—day)
- 291–92 Research Seminar: 20th Century Problems (3–3)** Sachar  
(Academic year—day)
- 293–94 Research Seminar: the Modern Near East (3–3)** Davison  
Prerequisite: History 193 or equivalent. (First half: not offered 1967–68. Second half: spring—evening.)

\* Primarily for students in the Institute for Sino-Soviet Studies.



295-96 **Research Seminar: the Modern Far East** (3-3) Johnson  
Prerequisite: History 195-96 or equivalent. (Academic year—day)

299-300 **Thesis Research** (3-3) Staff  
Required of all Master's candidates in history. (Academic year—as arranged; summer 1967)

#### FOURTH GROUP\*

311-12 **Readings in Medieval History** (3-3) Andrews  
(Academic year—as arranged)

341-42 **Readings in Modern European History** (3-3) Davison  
(First half: not offered 1967-68. Second half: spring—day.)

345-46 **Readings in Russian History** (3-3) Thompson  
(First half: not offered 1967-68. Second half: spring—day.)

351-52 **Readings in English History** (3-3) Kenny  
(First half: not offered 1967-68. Second half: fall—day.)

361-62 **Readings in Latin American History** (3-3)  
(Not offered 1967-68)

371-72 **Readings in American Social History** (3-3) Gray  
(Academic year—day; summer 1967—History 372)

375-76 **Readings in U. S. Political History** (3-3) Haskett  
(First half: not offered 1967-68. Second half: fall—day.)

†379-80 **Readings in Economic History** (3-3) Sharkey  
(Academic year—evening)

381-82 **Readings in American Diplomatic History** (3-3) Merriman  
(First half: fall—day. Second half: 1968-69 and alternate years.)

395-96 **Readings in Modern Far Eastern History** (3-3) Johnson  
(Academic year—evening)

398 **Advanced Reading and Research** (arr.) Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

399 **Dissertation Research** (arr.) Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

\* Prerequisite to third- and fourth-group courses: the appropriate second-group preparation and consent of the instructor.

† Fourth-group courses are limited to graduate students; but they are primarily for doctoral candidates.

‡ Interdepartmental course offered by departments of History and Economics. Students register in either department.



## **Institute for Sino-Soviet Studies**

### **MEMBERS OF THE INSTITUTE 1966-67**

Kurt London (*Director*), F.H. Michael (*Associate Director*), Joseph Baclawski, C.F. Elliott, R.M. Field, Matthew Gallagher, Bernard Gordon, Andrew Gyorgy, John Hardt, H.C. Hinton, Tao-tai Hsia, Tso-liang Hsiao, W.R. Johnson, W.H. Kraus, Bela Maday, Lothar Metzl, Vladimir Petrov, Sidney Ploss, Nadine Popluiko, Bernard Ramundo, R.B. Thompson, T.P. Thornton, Philip True, R.K. White

The Institute for Sino-Soviet Studies offers specialized graduate study in the School of Public and International Affairs. Students who lack background in Soviet and China studies are required to take undergraduate courses selected by the adviser as prerequisite to graduate work.

For description of the objectives and programs of the Institute, see pages 145-47.

### **ECONOMICS**

#### **267 Seminar: Soviet Economy (4)**

Development of the Soviet-type economy. Organization, policies, and problems: monetary, fiscal, production, allocative, foreign trade, economic growth. Workshop: case studies on sectoral or problem areas. Prerequisite: graduate status; Economics 101, 102, 133, and 134, or equivalent; and permission of instructor. (Fall—evening)

Hardt

#### **268 Seminar: Economic Theory and Development in Communist Countries (4)**

Appraisal of the Soviet-type model for economic development in the institutional framework of Soviet and other communist processes of economic development. Workshop: case studies on Eastern Europe, Chinese and other communist economies. Prerequisite: graduate status, Economics 101, 102, 133, and 134, or equivalent; and permission of instructor. (Spring—evening)

Hardt

#### **269 Economy of Communist China I (3)**

Analysis of organization, operation, policies, and problems. Development of the economy under communism. (Fall—evening)

Field

#### **270 Economy of Communist China II (3)**

Continuation of Economics 269, examining critical problems of development. Prerequisite: Economics 269 or permission of instructor. (Spring—evening)

Field

### **EDUCATION**

#### **281 Seminar: Education in the Soviet Union (3)**

History of Soviet education; comparison of current American and Soviet education; relationship between Soviet education and Soviet life; type of society and citizen Soviet leaders try to create, conditions which foster or impede their efforts. (Not offered 1967-68)

#### **282 Seminar: Education in Communist China (3)**

(Not offered 1967-68)



# GEOGRAPHY

## 265 Seminar: Geography of the Soviet Union (3) Baclawski

Physical features, economic geography, natural and energy resources, industries. Soviet transportation system, agriculture, multinational population trends; emphasis on population patterns along borderlands, especially Sino-Soviet border. (Fall—evening)

## 266 Seminar: Geography of China (3) True

Physical and economic geography; emerging industries, energy resources, transportation system. Emphasis on population "explosion"—its distribution and significance—and on regional geography, particularly on the Sino-Soviet border, Manchuria, Tibet, Mongolia, Inner Mongolia, and Sinkiang. (Spring—evening)

# HISTORY

## \*205-6 Seminar: Modern History of Eastern Europe (3-3) Petrov

East Central and Southeastern Europe in the 19th and 20th centuries. *First half:* to the mid-1930's. *Second half:* to the communist take-over (1948). (Academic year—day)

## \*207 Seminar: Communist Party of the Soviet Union (3) Ploss

Evolution of the communist movement of the Soviet Union. Comintern, Cominform, and other fundamentals of international communist organization. Selected case studies of individual congresses of the CPSU. (Spring—day)

## \*208 Seminar: History of the Comintern (3) Thornton

The Communist Third International: its sponsorship of revolution, its decline, its subservience to the Soviet State. (Fall—evening)

## \*245 Research Seminar: Russian History (3) Thornton

Research paper on some selected area of modern Russian History. Prerequisite: History 145-46 or equivalent. (Fall—day; summer 1967)

## \*295-96 Research Seminar: the Modern Far East (3-3) Johnson

*First half:* social and intellectual revolution in Modern China: replacement of scholar-gentry by 20th century intelligentsia. Emphasis on radical change after 1919. *Second half:* development of U. S. Far Eastern policy since 1898; with emphasis on coming of World War II, and U. S. policy toward China since 1941. Prerequisite: History 195-96 or equivalent. (Academic year—day)

## \*346 Readings in Russian History (3) Thompson

Russian 19th and 20th century history. Emphasis on political and intellectual movements reflecting the rise and fall of the revolutionary cycle. (Spring—day)

\* Prerequisite: appropriate second-group preparation and consent of instructor.



## POLITICAL SCIENCE

**215-16 Seminar: Sino-Soviet Blocs in World Affairs I-II (3-3)**

London

*First half:* significant issues of communism, particularly in the Soviet Union and Red China; concept and structure of "world socialist system," intra-Bloc relations with emphasis on Sino-Soviet dispute. *Prerequisite:* 3 semester hours in modern political theory. *Second half:* political ramifications of communist movement and its relations with the non-communist world. *Prerequisite:* 3 semester hours in international relations or comparative government. (Academic year—evening)

**224 Readings in Socialism and Communism (3)**

Kraus

Readings of primary and secondary works ranging from pre-Marxian and Marxian socialism to contemporary Marxism-Leninism. *Prerequisite:* 3 semester hours in modern political theory. (Fall—evening)

**225 Seminar: Marxism-Leninism (3)**

Kraus

Crucial theoretical problems, such as nature of revolution, dictatorship of proletariat, transition to communism, imperialism, and national liberation in Marxian and contemporary communist doctrine. *Prerequisite:* Political Science 224 or permission of instructor. (Spring—evening)

**227 Seminar: Government and Politics of Eastern Europe (4)**

Gyorgy

Comparative study of principal political, social, economic institutions; Soviet stake; patterns of Soviet domination; efforts toward economic and political integration; impact of Sino-Soviet dispute; U. S. policy toward satellite nations. Workshop: Eastern Europe in world affairs. (Spring—evening)

**229 Policies Toward Arts and Humanities in Communist Society (3)**

Petrov

Changing role of arts and literature in Soviet Union. Unionization of arts and struggle of cultural elite for freedom of expression. Forms and instruments of Party control. Party policies in cultural field. *Prerequisite:* Slavic and Oriental Languages and Literatures 162, 165, or equivalent. (Spring—evening)

**230 Seminar: International Communism (3)**

Metzl

*Fall semester:* emphasis on operational techniques. *Spring semester:* case studies. Students may receive credit for the fall semester and also the spring semester, but neither semester may be repeated for credit. (Fall and spring—evening)

**231 Seminar: Sino-Soviet Relations (3)**

Michael

Background, development, and status of conflict within the communist movement; emphasis on role of Chinese communists. *Prerequisite:* 3 semester hours selected from History 187; Political Science 101, 194; or equivalent. (Spring—day)

**232 Seminar: International Communications (3)**

White, Dasbach

East-West perspectives. History and theory, image factors, national patterns, communication in communist orbit and between it and Free World. (Fall—day)

**233 Seminar: Soviet Government and Politics (3)**

Elliott

Theoretical and historical bases of Soviet political system; socioeconomic setting of its formation; nature and role of the Party, government, and



mass organizations; selected problems of domestic and foreign policy. Prerequisite: 3 semester hours selected from History 145-46, Political Science 112, or equivalent. (Fall—day)

**234 Soviet Political Process (3)**

Ploss

(Replaces former Political Science 234 Seminar: Soviet Internal Policy)

Influence of revolutionary ideas, traditions, and accidental events on Soviet organization, and administration of Soviet social, economic, nationality, and military policies; application of these policies by leaders to maintain power. (Spring—day)

**\*237 Chinese Law (3)**

Hsia

Survey of history of Chinese law and its social background; Western impact toward end of Manchu Dynasty; legal concepts and institutions of the Chinese Republic from 1912 until the communist take-over in 1949. Philosophy and development of communist legal system from Kiangsi-Yenan period to present. (Spring—as arranged)

**†238 Soviet Law (3)**

Ramundo

Concept of "socialist legality"; legal relationship of individual to state and other participants in Soviet society; role of Party in Soviet legal system; Soviet philosophy of law; state (constitutional) law: Soviet federalism, governmental apparatus, rights and obligations of citizenship; criminal law; property law; labor law; selected topics in civil law and procedure; international law. (Fall—as arranged)

**253 Seminar: Chinese Government and Politics (3)**

Michael

Political institutions and concepts in late imperial times, during the revolution, under national government, and under communism. Emphasis on the communist period. Prerequisite: 3 semester hours selected from History 187; Political Science 101, 194; or equivalent. (Spring—evening)

**254 Colloquium: Modern China (3)**

Michael

Interuniversity research colloquium of faculty members of the Institute for Sino-Soviet Studies and other area universities from different disciplines concerned with the study of modern China. Critical discussions of research plans and studies in progress in weekly sessions. Advanced graduate students admitted with permission of faculty group. (Fall and spring—day)

**255 Colloquium: Russia and Eastern Europe (3)**

London, Gyorgy

Interuniversity research colloquium of faculty members of the Institute for Sino-Soviet Studies and other area universities from different disciplines concerned with the study of Russia and Eastern Europe. Critical discussions of research plans and studies in progress in weekly sessions. Advanced graduate students admitted with permission of faculty group. (Fall and spring—day)

**257 Seminar: Communism in Developing Countries (3)**

Thornton

Examination of international communist policy for, and communist parties in, developing countries. Case studies of Asia, Africa, and Latin

\* Same as Law 474 (2). Graduate students registering for Political Science 237 make special arrangements with the instructor for supplementary assignments equivalent to one additional semester hour.

† Same as Law 473 (2). Graduate students registering for Political Science 237 make special arrangements with the instructor for supplementary assignments equivalent to one additional semester hour.



- America. Basic communist concepts of imperialism and nationalism; development and current application of Soviet and Chinese variants of strategy and tactics for "national liberation." (Spring—evening)
- 258 Seminar: Communist Parties in Noncommunist World (3)** Gyorgy  
Movements and ideological variations of communist parties of France, Italy, the Scandinavian countries, and other Central and West European nations. Case studies on communist problems of Middle East and North African nations. (Fall—day)
- 265 Chinese Communist Policy Process (3)** Hinton  
Determinants of policy, view of the world, instrumentalities of power, shifting locus of power, interrelationship of domestic and foreign policy, crucial decisions and their implementation, formulation of policy, outlook. (Fall—evening)
- 269 Seminar: Soviet Foreign Policy (3)** Elliott  
External policies and relations of the USSR; world objectives of Soviet leaders; relations with other communist states, Western powers, and other countries; international propaganda, disarmament policy, foreign economic relations. Prerequisite: 3 semester hours selected from History 137, 145-46, or equivalent. (Spring—evening)
- 270 Political and Social Institutions of Eastern Europe (3)** Maday  
(Formerly Seminar: Soviet Foreign Policy Process)  
Major political and social factors which have shaped the inter-war, World War II, and post-war evolution of Eastern Europe. Emphasis on sociological and anthropological forces which have contributed to "Balkanization" of this area in the last fifty years. Each time the course is offered the concentration will be on one or two selected countries. (Fall—evening)
- 288 Seminar: Soviet Military Policy and Strategy (3)** Gallagher  
Soviet developments in military policy and strategy with attention to intra-Bloc military cooperation, political context of Soviet military policy, significant changes in recent Soviet military thought. (Fall—evening)
- 294 Seminar: Governments and Politics of Japan and Korea (3)** Hinton  
Readings, research, and discussion on contemporary political problems and relevant historical background of Japan, North and South Korea. (1968-69 and alternate years)
- 295 Seminar: Chinese Communist Foreign Policy (3)** Hinton  
Objectives; formulation and implementation of foreign policy; Communist China as Asian state, revolutionary influence, would-be power. Relevant background, such as Political Science 253, desirable. (Spring—day)
- 296 Seminar: the Communist Bloc in Far Eastern International Politics (3)** Hinton  
Evolution of communist strategy for Asia, armed struggle in South and Southeast Asia, wooing of national bourgeoisie, development of Asian communist states, local communist parties since World War II, Sino-Soviet rivalry. (Fall—evening)



- 298 **Southeast Asia in World Politics** (3) Gordon  
(Replaces former Political Science 298 *Sino-Soviet Relations in Southeast Asia*)

Southeast Asia in great-power perspective. Overlapping and conflicting interests, foreign policies, and military requirements of the United States, Japan, China, and the USSR. Balance-of-power concept and development of Asian subsystem. (Spring—evening)

## PSYCHOLOGY

- 259 **Seminar: Social Psychology of Communism** (3) White  
Public and governmental opinion in communist countries, authoritarian thinking, communist propaganda, problems of Western communication with communist countries. (Fall—day)

## SLAVIC AND ORIENTAL LANGUAGES AND LITERATURES

### CHINESE (MANDARIN)

- 163 **Chinese Literature in Translation** (3) Shih  
General survey of the development of Chinese Literature from ancient times to present. Major works will be studied in terms of their historical development. (Fall—day)

### SLAVIC

- 161-62 **Russian Culture** (3-3) Olkhovsky  
Survey of Russian cultural heritage from origins of ancient Russia to present—in English. Lecture, recitation, discussion, and individual reports on assigned topics. (Academic year—evening)
- 165 **Soviet Literature** (3) Popluiko  
Survey of major literary figures, movements, and styles. Revolution and its impact on literature and writers. Revival of psychological novel, short story, contemporary poetry—in English. (Fall—evening)

### Italian

See "Romance Languages and Literatures."

### International Affairs

See "Public and International Affairs."



## Journalism\*

*Associate Professor* R.C. Willson (*Chairman*)

*Associate Professorial Lecturers* H.L. Coppenbarger, J.E. Eisen, Daniel Gottlieb, F.L. Dennis, T.R. Smith, Charles Warren

*Assistant Professorial Lecturers* B.R. Berg, H.E. Paine, R.D. Woodward

*Bachelor of Arts with a major in Journalism (Departmental).*—Prerequisite: the Arts and Letters curriculum, page 63, including English 51–52 or 71–72, History 71–72, Political Science 5–6, and Journalism 71–72.

Required:

(1) The general requirements, pages 69–73.

(2) Twenty-four hours of second-group courses in Journalism, as follows: (a) Journalism 111, 196, 198; (b) nine hours chosen from Journalism 121, 133, 137, 139, 151; (c) six hours chosen from Journalism 115, 116, 140, 145, 146.

(3) Twelve hours of second-group courses, chosen in consultation with the major adviser, in one other department of Columbian College of Arts and Sciences. Students selecting science may take courses in more than one department.

American Thought and Civilization 101 *American Civilization* is recommended as a senior-year elective for Journalism majors.

### FIRST GROUP

#### 71–72 Journalism in American Society (3–3)

Willson

*First half:* evolution of newspapers and other media in relation to political, social, and economic life; concept of press freedom. *Second half:* mass media, problems of contemporary journalism, emphasis on media-government relations. (Academic year—day and evening)

### SECOND GROUP

#### 111 Reporting (3)

Coppenbarger

Gathering, evaluating, and writing news. (Fall—day; spring—evening)

#### 115 Newspaper Editing and Make-up (3)

Coppenbarger

Preparation of news copy, pictures, and other graphic material for publication; evaluation of news; page layouts; newspaper make-up. (Not offered 1967–68)

#### 116 Magazine Layout and Design (3)

Paine

Layout, typography, and design for magazines, newsletters, house organs, and similar publications for associations, institutions, and industry. (Spring—evening)

#### 121 Feature Writing (3)

Willson

Free-lancing magazine articles, material obtained through independent investigation. (Fall—day)

#### 125 Science Writing (3)

Writing science news for the mass media. (Spring—evening)

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



- 133 **Advanced Reporting: Community News** (3) Eisen  
Coverage and writing of local news. (Spring—day)
- 137 **Advanced Reporting: National Affairs** (3) Gottlieb  
Coverage and writing of federal government news from the point of view of the press association. (Fall—day)
- 139 **Advanced Reporting: Radio and Television News** (3) Warren  
Preparing news and public affairs programs for broadcast media. (Fall—evening)
- 140 **Photojournalism** (3) Smith  
Photographic techniques affecting publication, illustration and story angle, standards of judgment in selection and use of pictures, captions, editing, technique, cropping for effective reproduction. (Spring—evening)
- 145 **Principles and Problems of Public Relations** (3) Berg  
Principles, problems, and ethics of public relations for government agencies, commercial establishments, educational and other public institutions. Case histories of successful programs. (Fall—evening)
- 146 **Government Information** (3)  
Growth of information activities in government and the role of the information specialist. Writing and editing for government information operations. (Not offered 1967–68)
- 151 **Editorial Writing** (3)  
Writing editorials on public affairs. (Not offered 1967–68)
- 196 **Seminar** (3) Willson  
For journalism majors only. Research in areas relating journalism to secondary fields of study. (Spring—as arranged)
- 198 **Law of the Press** (3) Dennis  
Freedom of the press, censorship, legislative controls, publications as contempt of court, copyright, news gathering agencies, labor law and the newspaper business, law of libel, privileged matter, fair comment on public characters, right of privacy. (Fall—evening)

## Linguistics—Graduate Study

### COMMITTEE ON LINGUISTIC STUDY 1966–67

J.G. Allee, Jr. (*Chairman*), J.A. Frey, P.F. Gallagher, J.C. King, G.E. McSpadden, N.D. Nelson, C.W. Pettit, Helen Yakobson

The Graduate School of Arts and Sciences offers an interdepartmental Master of Arts field in Linguistics, which is directed by the departments of Germanic Languages and Literatures, Romance Languages and Literatures, and Slavic and Oriental Languages and Literatures. Interested students should consult the Chairman of the Committee on Linguistic Study and the chairman of the department concerned. Occasionally a



student is accepted with an undergraduate major in a language other than French, German, Italian, Portuguese, Russian, or Spanish.

Students may elect Linguistics in the fields of Germanic Languages and Literatures and Romance Languages and Literatures toward the degree of Doctor of Philosophy.

There is no undergraduate major in the field of Linguistics.

The candidate's program will normally be selected from the following courses. Students are urged to consult the Committee and the appropriate catalogues concerning courses which can be taken under the agreement for the Consortium of Universities of the Washington Metropolitan Area, Inc.

#### ANTHROPOLOGY

161 <i>Language and Culture</i> (3)	Rubin
162 <i>Linguistics in Anthropology</i> (3)	Taylor
163 <i>Language Problems in Developing Nations</i> (3)	Rubin
193 <i>Anthropological Methods</i> (3)	Crocker
261 <i>Field Methods in Sociolinguistics</i> (3)	Rubin

#### ENGLISH

125 <i>Introduction to English Linguistics</i> (3)	Allee
223-24 <i>Old English</i> (3-3)	Allee

#### GERMANIC LANGUAGES AND LITERATURES

201-2 <i>Middle High German</i> (3-3)	Legner
205-6 <i>Gothic</i> (3-3)	Legner
209-10 <i>Old High German</i> (3-3)	King
213-14 <i>Old Norse</i> (3-3)	Allee
223-24 <i>Linguistic Analysis of Modern German</i> (3-3)	King
225-26 <i>Seminar: Linguistics</i> (3-3)	King, Allee
227-28 <i>Sanskrit—Introduction to Indo-European Linguistics</i> (3-3)	King

#### MATHEMATICS

101 <i>Introduction to Mathematical Logic</i> (3)	Nelson
122 <i>Introduction to Abstract Algebra</i> (3)	Staff
124 <i>Introduction to Matrix Theory</i> (3)	Staff
201-2 <i>Mathematical Logic</i> (3-3)	Nelson

#### PHILOSOPHY

122 <i>Advanced Logic</i> (3)	Griffith
196 <i>Philosophy of Language</i> (3)	Schlager

#### PSYCHOLOGY

115 <i>Psychology of Language and Communication</i> (3)	Mosel
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## ROMANCE LANGUAGES AND LITERATURES

## FRENCH

- |   |          |
|---|----------|
| 103 <i>Problems of Pronunciation and Intonation</i> (3) | Vigneras |
| 212 <i>Historical French Grammar</i> (3)                | Vigneras |
| 213-14 <i>Old French</i> (3-3)                          | Vigneras |

## SPANISH

- |   |           |
|---|-----------|
| 103 <i>Problems of Pronunciation and Intonation</i> (3) | McSpadden |
| 212 <i>Historical Spanish Grammar</i> (3)               | McSpadden |
| 214 <i>Old Spanish</i> (3)                              | McSpadden |

## GENERAL COURSES IN ROMANCE LANGUAGES AND LITERATURES

- |  |           |
|--|-----------|
| 270 <i>Experimental Phonetics</i> (3)                            | McSpadden |
| 279 <i>Introduction to Romance Philology and Linguistics</i> (3) | McSpadden |

## SLAVIC AND ORIENTAL LANGUAGES AND LITERATURES

## CHINESE (MANDARIN)

- |   |    |
|---|----|
| 125 <i>Chinese Linguistic Structure</i> (3)                     | Lu |
| 126 <i>Comparative Chinese-English Linguistic Structure</i> (3) | Lu |

## SLAVIC

- |   |       |
|---|-------|
| 125 <i>Russian Linguistic Structure</i> (3)                     | Child |
| 126 <i>Comparative Russian-English Linguistic Structure</i> (3) | Child |
| 205 <i>Old Church Slavonic</i> (3)                              | Key   |
| 206 <i>Readings in Old Russian Literature</i> (3)               | Key   |
| 215-16 <i>History of the Russian Literary Language</i> (3-3)    | Key   |

## SPEECH AND DRAMA

- |   |                  |
|---|------------------|
| 101 <i>Phonetics</i> (3)                                      | Hillis           |
| 171 <i>Introduction to Speech Pathology and Audiology</i> (3) | Pettit           |
| 176 <i>Speech, Hearing, and Language Development</i> (3)      | Monsees          |
| 279 <i>Anatomy and Physiology of Speech and Hearing</i> (3)   | Bowling          |
| 280 <i>Advanced Speech Pathology</i> (3)                      | Hillis           |
| 281-82 <i>Clinical Audiology</i> (3-3)                        | Herer            |
| 284 <i>Experimental Phonetics</i> (3)                         | Hillis           |
| 285 <i>Language and Speech of the Hearing Handicapped</i> (3) | Monsees          |
| 291 <i>Seminar: Speech Pathology</i> (3)                      | Pettit and Staff |
| 292 <i>Seminar: Audiology</i> (3)                             | Staff            |
| 295 <i>Independent Research in Speech and Hearing</i> (arr.)  | Staff            |



## Mathematics\*

*Professors* N.D. Nelson (*Chairman*), T.P.G. Liverman, N.A. Wiegmann  
*Professorial Lecturers* W.H. Marlow, D.M. Dribin, Thomas Saaty, Joseph Blum  
*Associate Professors* W.A. Smith, Hewitt Kenyon, R.Z. Vause  
*Associate Professorial Lecturer* P.J. Kalman  
*Assistant Professors* Paul Sadagursky, Dagmar Henney, Ruth Bari, I.I. Glick,  
 M.D. Green, Irving Katz, E.A. Stone  
*Assistant Professorial Lecturers* Mabel Morris, A.J. Ziffer, J.N. Snyder, G.J.  
 Etgen, Jeuel LaTorre, R. P. Pikul  
*Instructor* James McPherson

*Bachelor of Arts or Bachelor of Science with a major in Mathematics (Departmental).*—Prerequisite: the Arts and Letters or the Science curriculum, respectively, pages 63–64.

Required: in addition to the general requirements, pages 69–73, twenty-four semester hours of Mathematics of approved second- and third-group courses.

*Master of Arts in the field of Mathematics.*—Prerequisite: a Bachelor's degree with a major in Mathematics at this University, or the equivalent.

Required: the general requirements, pages 77–79.

*Master of Arts in the field of Linguistics.*—See pages 267–69 and the departments of Germanic Languages and Literatures, Romance Languages and Literatures, and Slavic and Oriental Languages and Literatures.

*Doctor of Philosophy fields of study in Mathematics: Algebra (Finite Groups, Matrix Theory), Analysis (Functional, Generalized Functions), Measure and Integration, Logic, and General Topology.*—See pages 77–78, 79–80, for requirements for the degree.

*Bachelor of Arts in Education with a teaching field in Mathematics.*—Prerequisite: the Education curriculum, pages 65–66.

Required: the Mathematics option and the professional courses listed on pages 96–97.

### FIRST GROUP†

#### 3 College Algebra (3)

Equivalent to second-year high school algebra. Prerequisite: one year each of high school algebra and high school geometry. (Fall and spring—day and evening; summer 1967)

Staff

#### 6 Plane Trigonometry (3)

Prerequisite: two years of high school algebra and one year of high school geometry, or Mathematics 3 (or concurrent registration therefor). (Fall and spring—day and evening; summer 1967)

Staff

#### 9 General Mathematics I (3)

For students electing Mathematics 9 and 10 as a terminal sequence. Numerals and numbers, number bases, mathematical systems, sets, propositional logic and truth values. Prerequisite: two years of high school mathematics. (Fall and spring—day and evening; summer 1967)

Staff

#### 10 General Mathematics II (3)

Number systems, Euclidean and non-Euclidean geometry, graphs, func-

Staff

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.

† New students registering for Mathematics 3, 6, 9, 15, 21, or 27 are required to take a placement examination.



tions, introduction to analytic geometry. Prerequisite: Mathematics 9. (Fall—evening; spring—day and evening; summer 1967)

**15 Finite Mathematics I (3)** Staff

Introduction to logic, sets, and probability. Prerequisite: two years of high school mathematics. (Fall—day and evening; spring—evening; summer 1967)

**16 Finite Mathematics II (3)** Staff

Vectors and matrices, mathematics of finance and accounting, linear programming, introduction to game theory. Prerequisite: Mathematics 15. (Spring—day and evening; summer 1967)

**21 Calculus I (3)** Staff

Elementary concepts of analytic geometry. Differentiation of algebraic functions with applications. Prerequisite: Mathematics 3 and 6; or two years of high school algebra, one year of high school geometry, and one-half year of high school trigonometry; or equivalent. (Fall and spring—day and evening; summer 1967)

**22 Calculus II (3)** Staff

Differentiation and integration of transcendental functions and applications, topics in analytic geometry, techniques of integration. Prerequisite: Mathematics 21. (Fall and spring—day and evening; summer 1967)

**23 Calculus III (3)** Staff

Vector concepts, improper integrals, polar coordinates, infinite series, and solid geometry. Prerequisite: Mathematics 22. (Fall and spring—day and evening; summer 1967)

**24 Calculus IV (3)** Staff

Multiple integration and partial differentiation with applications, line and surface integrals, differential equations. Prerequisite: Mathematics 23. (Fall and spring—day and evening; summer 1967)

**27 Calculus I and II (6)** Staff

The equivalent of Mathematics 21 and 22. (Not offered 1967–68)

**28 Calculus III and IV (6)** Staff

The equivalent of Mathematics 23 and 24. (Not offered 1967–68)

**SECOND GROUP\***

**101 Introduction to Mathematical Logic (3)** Nelson

Development of propositional and predicate calculi, basic semantic concepts, elementary intuitive set theory, Boolean algebra. Prerequisite: Mathematics 24 or Philosophy 121. (Fall—evening)

**102 Fundamental Concepts of Mathematics (3)** Nelson

Axiomatic set theory, cardinal and ordinal arithmetic, foundations of the real number system. Prerequisite: Mathematics 101 or permission of instructor. (Spring—evening)

\* Mathematics 24 is prerequisite to all second-group courses. Exception to this regulation may be made for Mathematics 101, 122, and 124. Students anticipating a substantial concentration in mathematics should consult with the Department about early completion of these courses.



- 106 Introduction to Topology (3)** Kenyon  
Prerequisite: Mathematics 139 or permission of instructor. (Spring—  
evening)
- 111 Mathematics for Engineers and Physicists I (3)** Staff  
Differential equations, linear algebra. (Fall—evening; summer 1967)
- 112 Mathematics for Engineers and Physicists II (3)** Staff  
Fourier series, Laplace transformation, partial differential equations. Pre-  
requisite: Mathematics 111. (Spring—evening; summer 1967)
- 113 Graph Theory (3)** Saaty  
Directed and undirected graphs; unicursal graphs; shortest paths; Hamil-  
ton circuits; incidence, circuit, and cut-set matrix relations; coloring prob-  
lems; network flow. (Summer 1967)
- 120 Introduction to Theory of Numbers (3)** Vause  
(1968–69 and alternate years)
- 122 Introduction to Abstract Algebra (3)** Staff  
(Fall—evening; spring—day; summer 1967)
- 123 Linear Algebra (3)** Staff  
Prerequisite: Mathematics 122. (Fall—day; spring—evening)
- 124 Introduction to Matrix Theory (3)** Staff  
Elementary theory of finite vector spaces, determinants, equivalence, mat-  
rices with polynomial elements, similarity of matrices. (Spring—eve-  
ning; summer 1967)
- 127 Foundations of Geometry (3)** Non-  
Alternative postulational developments of Euclidean geometry. (Not offered 1967–68)
- 134 Introduction to Boundary Value Problems (3)** Staff  
Prerequisite: Mathematics 111 or 142. (Spring—day)
- 135 Projective Geometry (3)** Dribin  
(Fall—evening)
- 139 Advanced Calculus I (3)** Staff  
Review and extension of elementary one-variable calculus, emphasis on  
the theoretical foundations. Prerequisite: Mathematics 24 or 28, or  
equivalent. (Fall—day and evening; spring—evening; summer 1967)
- 140 Advanced Calculus II (3)** Staff  
Calculus of several variables. Prerequisite: Mathematics 139 or equiva-  
lent. (Spring—evening; summer 1967)
- 142 Theory of Differential Equations (3)** Staff  
Prerequisite: Mathematics 139. (Fall—evening)
- 153 Introduction to Numerical Analysis (3)** Marlow  
(1968–69 and alternate years)



- 154 **Difference Equations** (3) Staff  
(1968-69 and alternate years)
- 157 **Introduction to Complex Variable Theory** (3) Staff  
(Fall—evening; summer 1967)

### THIRD GROUP

- 201-2 **Mathematical Logic** (3-3) Nelson  
(Academic year—evening)
- 220 **Theory of Numbers** (3) Vause  
(1968-69 and alternate years)
- 237-38 **Theory of Functions of a Complex Variable** (3-3) Glick  
(Academic year—evening)
- 243-44 **Numerical Analysis** (3-3) Marlow  
(Academic year—evening)
- 249 **Ordinary Differential Equations** (3)  
(Not offered 1967-68)
- 250 **Measure and Integration** (3) Henney  
Lebesgue measure and integration, measure and integration in abstract spaces, the Daniell integral. (Spring—evening; summer 1967)
- 251-52 **Real and Abstract Analysis** (3-3) Liverman  
Elements of topology; filters, compactness, metric spaces. Continuity and double limits. Banach and Hilbert spaces. Vector to vector functions; implicit function theorem. Prerequisite: Mathematics 106, 124, and 140; or equivalent. (1968-69 and alternate years)
- 253-54 **Topics in Nonlinear Mathematics** (3-3) Saaty  
(Not offered 1967-68)
- 255 **Differential Geometry** (3) Dribin  
(1968-69 and alternate years)
- 256 **Introduction to Algebraic Geometry** (3) Dribin  
(1968-69 and alternate years)
- 257 **Lie Groups** (3) Katz  
(Spring—evening)
- 258 **Group Representations** (3)  
(Not offered 1967-68)
- 259 **Advanced Topics in Group Theory** (3) Katz  
(1968-69 and alternate years)
- 261 **Generalized Functions and Operational Methods** (3) Liverman  
Theory of generalized functions in one variable; operational calculus of generalized functions; applications to differential equations and Fourier analysis. Prerequisite: Mathematics 140. (Fall—evening)



- 262 Advanced Operational Methods (3)** Liverman  
Generalized functions on test spaces of analytic functions; operational calculus in several variables; applications to partial differential and convolution equations of applied mathematics. Prerequisite: Mathematics 261. (Spring—evening)
- 265-66 Modern Algebra (3-3)** Katz  
Fundamental concepts of theory of groups, rings, and fields; theory of finite fields, extension fields, Galois groups, factorization theory in Gaussian domains, and groups with operators. Prerequisite: Mathematics 122 and 124, or equivalent. (Academic year—day)
- 267 Topics in Matrix Theory (3)** Katz  
Theory of linear transformations (vector spaces over a division ring), advanced classical theory, matrix representation of groups and rings, special topics as time allows. Prerequisite: Mathematics 124 and an elementary knowledge of groups, rings, and fields. (1968-69 and alternate years)
- 268 Calculus of Variations (3)**  
(Not offered 1967-68)
- 270 Tensor Analysis (3)**  
(Summer 1968)
- 272 Hilbert Space (3)**  
(Not offered 1967-68)
- 277 Partial Differential Equations (3)** Staff  
(Not offered 1967-68)
- 279-80 Theories of Optimization (3-3)** Saaty  
(1968-69 and alternate years)
- 281-82 General Topology (3-3)**  
(1968-69 and alternate years)
- 283 Topological Groups (3)** Green  
(Fall—day)
- 285 Algebraic Topology (3)** Bari  
(Fall—day)
- 287-88 Functional Analysis (3-3)** Taam\*  
(Academic year—evening)
- 291-92 Seminar (3-3)**  
(Academic year—as arranged)
- 295 Reading and Research (3)** Staff  
May be repeated once for credit. (Fall and spring—as arranged)
- 299-300 Thesis Research (3-3)** Staff  
(Academic year—as arranged; summer 1967)

\* Appointment effective September, 1967.



**FOURTH GROUP**

**398 Advanced Reading and Research (arr.)** Staff  
 Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

**399 Dissertation Research (arr.)** Staff  
 Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

**Microbiology\***

*Professors* A.M. Griffin, Mary Louise Robbins, R.C. Parlett (*Chairman*), L.J. Griffith (*Visiting*)

*Professorial Lecturers* F.B. Gordon, Dorothy Heilman (*Cellular Immunology*)

*Associate Professors* Rudolph Hugh, L.F. Affronti

*Assistant Professor* Melvin Reich

*Assistant Professorial Lecturer* P.J. Price

*Lecturer* E.L. Speck

*Master of Science in the field of Microbiology.*—Prerequisite: a Bachelor's degree from this University, or the equivalent, with a major in Biology, Botany, Chemistry, or Zoology. The undergraduate program must include the following courses or equivalent: Biological Sciences 1–2; Chemistry 11–12, 51–52; Mathematics 21, 22 (22 may be taken concurrently with the graduate program); Physics 1, 2.

Required: the general requirements, pages 77–79. The thirty semester hours must include (if not presented for admission) Microbiology 211 and 212, 293–94, 299–300 and Biochemistry 221–22. The remaining courses are to be selected from Microbiology 214, 217, 225, 227, 230, 231, and 233. The student with much microbiological background may substitute for credit one or more courses from the following: cytology, genetics, cell physiology, entomology, histology, biostatistics, and protozoology. It is not always possible to arrange courses and research so that the student can be assured of completing all required work in one academic year.

*Doctor of Philosophy fields of study in Microbiology: Determinative Bacteriology, Immunochemistry, Immunology, Microbial Chemistry, Microbial Pharmacology, Microbial Physiology, Mycology, and Virology.*—See pages 77–78, 79–80 for requirements for the degree.

**211 Microbiology (4)** Staff  
 Bacteria, fungi, rickettsiae, and viruses. Prerequisite: any biological laboratory science, Chemistry 51–52 (prerequisite for Medical Technology students: Chemistry 22, 51). Laboratory fee for nonmedical students, \$16. (Fall—as arranged)

**212 Pathogenic Microbiology (4)** Staff  
 Continuation of 211 with emphasis upon the harmful activities of microorganisms. Prerequisite: Microbiology 211 or equivalent. Laboratory fee for nonmedical students, \$16. (Spring—as arranged)

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



**214 Tissue Cell Culture and Somatic Variation (4)**

Price

Techniques of tissue culture and means of studying somatic variations.  
Prerequisite: Microbiology 211 and 212. (Spring—as arranged)

**217 Advanced Mycology (4)**

Staff

Lecture (2 hours), laboratory (4 hours). Advanced study of fungi. Prerequisite: Microbiology 211 or equivalent. Laboratory fee for nonmedical students, \$16. (Fall—as arranged)

**225 Microbial Chemistry and Physiology (3)**

Affronti, Reich

Lecture (2 hours), laboratory (2 hours). Biochemical features of various microorganisms—especially bacteria—described and compared with those of the animal cell. Prerequisite: Biochemistry 221-22 or equivalent. Microbiology 211 or equivalent is recommended. Laboratory fee for nonmedical students, \$16. (1967-68 and alternate years: fall—as arranged)

**227 Microbial Pharmacology (3)**

Affronti, Reich

Lecture (2 hours), laboratory (2 hours). Interactions of drugs and microorganisms—action of drugs on microbes, resistance of microbes to drugs, metabolism of drugs by microbes. Prerequisite: Microbiology 225 or permission of instructor. Laboratory fee for nonmedical students, \$16. (1968-69 and alternate years: fall—as arranged)

**230 Statistics (2)**

Staff

For graduate students. Application of statistical methods to problems of microbiology. Prerequisite: elementary college algebra. (Spring—as arranged)

**231 Immunology and Immunochemistry (4)**

Parlett

Advanced immunologic theory. Demonstration of serological phenomena. Prerequisite: Microbiology 211. Laboratory fee for nonmedical students, \$16. (Fall—as arranged)

**233 Biology of Viruses (4)**

Robbins

Lectures and laboratory for graduate students. Study of viruses and rickettsiae. Prerequisite: Microbiology 211. Laboratory fee for nonmedical students, \$16. (Fall—as arranged)

**235 Systematic Bacteriology (3)**

Hugh

History of bacterial classification. International rules of nomenclature as applied to bacteria, development of bacterial classification based upon relationships. Survey of characteristics of bacterial groups. Prerequisite: Microbiology 212 or equivalent. (Fall—as arranged)

**251 Bacteriology (2)**

Hugh

Primarily an elective course for medical students; open to qualified graduate students. Lectures on clinical situations involving bacteriology. (Fall—day)

**255 Virology (2)**

Robbins

Primarily an elective course for medical students; open to qualified graduate students. Parallel to Microbiology 251, with substitution of viruses for bacteria. (Fall—day)



- 257 Immunology (2)** Parlett, Affronti  
Primarily an elective course for medical students; open to qualified graduate students. Emphasis on applied immunology in medical situations.  
(Fall—day)
- 293-94 Staff Seminar (1-1)** Staff  
For graduate students. Bi-weekly throughout the year. (Academic year—as arranged)
- 295 Research in Microbiology (arr.)** Staff  
Content differs each time the course is offered; may be repeated once for credit. (Fall and spring—as arranged; summer 1967)
- 299-300 Thesis Research (3-3)** Staff
- 398 Advanced Reading and Research (arr.)** Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)
- 399 Dissertation Research (arr.)** Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

## Music\*

Associate Professor George Steiner (*Chairman*)  
Assistant Professor Robert Parris  
Assistant Professorial Lecturers Cecelia Porter, Judith Marshall, Neil Tilkens  
Studio Lecturers in Applied Music N.O. Scribner, Jr., John Stephens, Margaret Tolson, Jule Zabawa, Mark Thomas, Marian McNabb, Constance Russell, Sidney Forrest, Peggy Reinburg, R.C. Rice, R.O. White

*Bachelor of Arts with a major in (1) Music History and Literature, (2) Music Theory, or (3) Applied Music (Departmental).*—Prerequisite: the Arts and Letters curriculum, page 63, or equivalent, including Music 5-6.

Required: in addition to the general requirements, pages 69-73, Music 103-4 and 131-32; a minimum of four semesters in Music Ensemble groups (or evidence of equivalent experience); twenty-four semester hours of second-group courses as follows:

1. *For the major in Music History and Literature.*—Twelve semester hours of Music History and Literature courses, six hours of Applied Music, and six hours of Music Theory courses.

2. *For the major in Music Theory.*—Twelve semester hours of Music Theory courses, six hours of Music History and Literature courses, and six hours of piano (other instrument or voice if departmental requirements for proficiency in piano are met).

3. *For the major in Applied Music.*—Twelve semester hours of Applied Music in field of specialization, senior recital, six hours of Music Theory courses, and six hours of Music History and Literature courses.

\* Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.



*Master of Music in the field of Music Theory, Music Composition, Conducting, or Applied Music.*—Prerequisite: a Bachelor's degree with an undergraduate major in one of the following, at this University, or the equivalent: (1) Music History and Literature, (2) Music Theory, or (3) Applied Music.

Required: the general requirements, pages 77–79. The thirty semester hours of required second- and third-group course work including a thesis (299–300) are as follows:

1. *In the field of Music Theory.*—Eighteen semester hours of Music History and Literature and Music Theory courses, six hours of Applied Music, and a thesis demonstrating research ability in theoretical, creative, or analytical techniques.

2. *In the field of Music Composition.*—Eighteen semester hours of Music History and Literature and Music Theory courses, six hours of Applied Music, and a creative thesis of one composition in large form properly prepared for performance (chamber music, a symphonic form, or a choral work with orchestral accompaniment) including a written theoretical, formal, and harmonic analysis of the work.

3. *In the field of Conducting.*—Eighteen semester hours of Music History and Literature and Music Theory courses, six hours of Applied Music, and a thesis demonstrating research ability in theoretical, creative, or analytical techniques. The requirements also include an acceptable public conducting performance.

4. *In the field of Applied Music.*—Twelve semester hours of Applied Music in the area of concentration (piano, harpsichord, organ, voice, a bowed string or an orchestral woodwind instrument), twelve hours of Music Theory and Music History and Literature courses. The thesis area consists of (1) a public recital or performance before a designated committee—such a recital or performance must be representative of an extensive and well-rounded repertory, performed on a professionally accepted artistic level, including verbal historical and analytical lecture notes on the musical content of the program; (2) demonstrated leadership in an ensemble performance (opera or oratorio for voice); and (3) a written report on some approved theoretical area related to the student's concentration.

*Bachelor of Arts in Education with a teaching field in Music.*—Prerequisite: the Education curriculum, pages 65–66.

Required: the Music option and professional courses listed on pages 96–97.

## MUSIC HISTORY AND LITERATURE

### FIRST GROUP

#### 3 Music Appreciation I (3)

Steiner, Tilkens, Parris

Introductory history of musical styles, related to listening; elements and materials of music. (Fall and spring—day and evening; summer 1967)

#### 4 Music Appreciation II (3)

Steiner, Tilkens

Survey of musical forms, structures and textures; aural analysis of selected literature. (Fall and spring—day and evening; summer 1967)

### SECOND GROUP

#### 103–4 History of Music (3–3)

Steiner, Porter

Development of music in the Western World from the early Christian Era to the present. (Academic year—day; summer 1967)

#### 105 Music of the Baroque Period (3)

Parris

Study of the musical styles, techniques, and literature from 1600 to 1750. (Not offered 1967–68)



- 106 **Music of the Classic Period** (3) Tilkens  
Study of styles, techniques, and literature from the 18th century schools through Haydn, Mozart, and Beethoven. (Fall—day)
- 107 **Music of the Romantic Period** (3) Marshall  
Study of the musical styles, backgrounds, and literature from Schubert through the 19th century. (Spring—day)
- 108 **Music of the 20th Century** (3) Steiner  
The principal schools, techniques, developments, and trends of the 20th century. (Not offered 1967–68)
- 109 **Orchestra Literature** (3) Steiner  
Survey of the history and styles of orchestra literature, analysis of representative works. (Not offered 1967–68)
- 110 **Chamber Music Literature** (3) Steiner  
Survey of the history and styles of chamber music literature, analysis of representative works. (Fall—day)
- 121 **The Opera** (3) Marshall  
Survey of the history and styles of opera, analysis of representative works. (Fall—day; summer 1967)
- 125 **Keyboard Music Literature** (3) Tilkens  
Survey of the history, style, and major content of the keyboard literature from the 16th century to the present. (Spring—day)

## MUSIC THEORY

### FIRST GROUP

- 1–2 **Elements of Music** (3–3) Porter  
*First half:* notation, scales, keys, intervals, terms, rhythms, ear-training, sight-singing. *Second half:* elementary keyboard harmony, melodic and harmonic dictation. (Academic year—day)
- 5–6 **Elementary Harmony** (3–3) Parris  
Triads, inversions; chord analysis, construction and progression; part-writing, modulations, figured bass. Prerequisite: Music 1–2 or satisfactory passing of placement examination. (Academic year—day; summer 1967)

### SECOND GROUP

- 131–32 **Advanced Harmony** (3–3) Parris  
Practice in harmonic writing and analysis, realization of unfigured bass, altered chords, elementary 18th century counterpoint. Prerequisite: Music 5–6 or equivalent. (Academic year—day)
- 135 **Counterpoint** (3) Parris  
Study and practice of early contrapuntal techniques. (Fall—day)



- 137 Orchestration (3)** Parris  
Instrumental scoring. (Not offered 1967-68)
- 138 Form and Analysis (3)** Parris  
Analysis of musical forms in representative musical literature. (Spring  
—day)
- 151 Conducting (3)** Steiner  
Technique of conducting, score reading, rehearsal procedures, analysis,  
and interpretation of selected musical literature; practice in conducting.  
(Spring—day)

**THIRD GROUP**

- 231-32 Composition (3-3)** Parris  
(Academic year—as arranged)
- 235 Advanced Counterpoint (3)** Parris  
(Spring—as arranged)
- 251 Advanced Conducting (3)** Steiner
- 299-300 Thesis Research (3-3)** Staff  
(Academic year—as arranged)

**APPLIED MUSIC**

All Applied Music courses may be repeated for credit. The supplementary fee is waived for full-time music majors. One-semester hour courses are individual lessons of ½ hour a week; supplementary fee, \$40. Two-, three-, or six-semester hour courses are individual lessons of 1 hour a week; supplementary fee, \$80. Six-semester hour courses include lessons, supervised ensemble preparation, and required practice 15 hours a week.

**FIRST GROUP**

Three hours of practice are required for each semester hour.

- 11 Piano (1)** Tolson, McNabb, Russell, Tilkens  
(Fall and spring—as arranged; summer 1967)
- 12 Piano (2)** Tolson, McNabb, Russell, Tilkens  
(Fall and spring—as arranged)
- 13 Voice (1)** Zabawa  
(Fall and spring—as arranged; summer 1967)
- 14 Voice (2)** Zabawa  
(Fall and spring—as arranged)
- 15 Organ (1)** Scribner, Reinburg, Rice  
(Fall and spring—as arranged; summer 1967)



- 16 **Organ** (2) Scribner, Reinburg, Rice  
(Fall and spring—as arranged)
- 17 **Orchestral Instrument** (1) Staff  
(Fall and spring—as arranged; summer 1967)
- 18 **Orchestral Instrument** (2) Staff  
(Fall and spring—as arranged)
- 51 **Orchestra** (1) Steiner  
Preparation and performance of orchestral literature. Prerequisite: audition before Director. (Fall and spring—evening)
- 52 **Instrumental Ensemble** (2) Steiner  
Chamber ensemble groups in addition to orchestra participation. (Fall and spring—evening)
- 53 **Chorus** (1) Zabawa  
Preparation and performance of choral literature. Prerequisite: audition before Director. (Fall and spring—evening)
- 54 **Chamber Choir** (2) Zabawa  
Small vocal groups in addition to chorus participation. (Fall and spring—evening)

## SECOND GROUP

Prerequisite: audition to meet departmental requirements. Required practice: 5 hours a week for one-semester hour courses, 10 hours a week for two-semester hour courses, 12 hours a week for three-semester hour courses.

- 111 **Piano** (1) Tolson, Parris, Russell  
(Fall and spring—as arranged; summer 1967)
- \*112 **Piano** (2 or 3) Tolson, Parris, Russell  
(Fall and spring—as arranged)
- 113 **Voice** (1) Zabawa  
(Fall and spring—as arranged; summer 1967)
- \*114 **Voice** (2 or 3) Zabawa  
(Fall and spring—as arranged)
- 115 **Organ** (1) Rice  
(Fall and spring—as arranged; summer 1967)
- \*116 **Organ** (2 or 3) Rice  
(Fall and spring—as arranged)
- 117 **Orchestral Instrument** (1) Staff  
(Fall and spring—as arranged; summer 1967)
- \*118 **Orchestral Instrument** (2 or 3) Staff  
(Fall and spring—as arranged)

\*Only music majors may elect 3 semester hours of credit.



## THIRD GROUP

- 211 **Piano** (3)  
(Fall and spring—as arranged)
- 212 **Piano** (6)  
(Fall and spring—as arranged)
- 213 **Voice** (3)  
(Fall and spring—as arranged)
- 214 **Voice** (6)  
(Fall and spring—as arranged)
- 215 **Organ** (3)  
(Fall and spring—as arranged)
- 216 **Organ** (6)  
(Fall and spring—as arranged)
- 217 **Orchestral Instrument** (3)  
(Fall and spring—as arranged)
- 218 **Orchestral Instrument** (6)  
(Fall and spring—as arranged)

**Pathology\***

*Professors* T.M. Peery (*Chairman*), W.R. Duryee (*Research-Experimental*),  
F.N. Miller, Jr., William Newman  
*Clinical Professors* L.E. Zimmerman (*Ophthalmic Pathology*), J.M. Blumberg,  
E.B. Helwig (*Dermatologic Pathology*), G.H. Reifstein  
*Associate Professors* W.L. Marsh, Lois Platt (*Cytology*), Alexander Breslow  
*Associate Clinical Professors* Louis Hansen, J.S. Howe, V.E. Martens, Theodore Winship, R.E. Palmer, Henry Scofield  
*Assistant Professors* F.S. Jannotta, Gloria Brennan  
*Assistant Clinical Professors* W.F. Enos, Cornelia Hoch-Ligeti, L.W. Fix, Grace Guin, E.H. Zeitler, Marjorie Williams, C.B. Cook, D.R. Parkinson, I.D. Godwin, W.J. Jaffurs, M.A. Weinberger, Floris Garner (*Comparative Pathology*)  
*Clinical Instructors* R.L. Davis, P.W. Lampert  
*Special Lecturer* L.C. Johnson

*Bachelor of Science in Medical Technology*.—Prerequisite: the Medical Technology curriculum, page 65.

Required: the general requirements, pages 69–73, including Microbiology 211 and 212, and the following second-group courses offered in the University Hospital: Pathology 115–16, 117–18, and 119–20.

*Doctor of Philosophy fields of study in Pathology: Comparative Pathology and Ophthalmic Pathology*.—See pages 77–78, 79–80 for requirements for the degree.

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



- 115-16 Introduction to Medical Science (1-1)** Marsh and Staff  
Lectures for medical technology students on physiology, pathology, and medicine to accompany Pathology 119-20. (Academic year—1 hour a week)
- 117-18 Principles in Medical Technology (4-4)** Marsh and Staff  
For medical technology students. Theories, principles, and sources of error of methods used in clinical chemistry, clinical bacteriology, serology, hematology, and clinical microscopy. (Academic year—4 hours a week)
- 119-20 Medical Technology Laboratory (10-10)** Marsh and Staff  
Rotation through the University Hospital pathology laboratories: hematology and urinalysis, 12 weeks; chemistry, 12 weeks; bacteriology and parasitology, 12 weeks; blood bank, 6 weeks; serology, 4 weeks; tissue pathology, 4 weeks. (35 hours a week for 50 weeks)
- \*201 Pathology (8)** Peery, Miller, Breslow, Jannotta  
Inflammations, degenerations, malformations, trauma, and neoplasms. Special pathology of organ systems; correlation with symptoms and physical signs. Gross and microscopic study of diseased tissues. (Fall—12 hours a week)
- 256 Cells—Normal and Pathologic (1)** Jannotta, Duryee, Platt  
Normal and abnormal cell structure, function, and reproduction. Practical problems of cellular diagnosis in cytogenetics, exfoliative cytology, and bone marrow studies. (Spring—1 hour a week)
- 262 Problems in Experimental Cellular Pathology (1)** Duryee  
Cytological and biochemical aspects of cellular function in relation to normal and selected pathological conditions. (Spring—1 hour a week)
- 283 Anatomical Pathology Clerkship (5 to 30)** Peery and Staff  
Participation in the necroscopy and surgical pathology service. Prerequisite: Pathology 201. Five semester hours of credit for each 4-week period. Students may receive up to 30 semester hours of credit for 6 months full-time. University Hospital. (Fall or spring—as arranged)
- 295 Comparative Pathology (5 to 30)** Garner and Staff  
Participation in an active service in veterinary pathology, including both wild and domestic animals. Prerequisite: Pathology 201. Five semester hours of credit for each 4-week period. Students may receive up to 30 semester hours of credit for 6 months full-time. Armed Forces Institute of Pathology. (Fall or spring—as arranged)
- 398 Advanced Reading and Research (arr.)** Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)
- 399 Dissertation Research (arr.)** Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

\* Required course for medical students; open to limited number of graduate students.



## Pharmacology\*

*Professors* H.G. Mandel (*Chairman*), Clarke Davison

*Professorial Lecturers* B.B. Brodie, F.E. Hahn

*Associate Professors* V.H. Cohn, Jr., Paul Mazel, K.S. Kim (*Research*)

*Assistant Professors* W.P. Weiss, W.R. Jondorf (*Research*), G.A. Hahn (*Research*), Philip Klubes (*Research*), J.A. Straw

*Master of Science in the field of Pharmacology.*—Prerequisite: a Bachelor of Arts or Bachelor of Science degree. The undergraduate program must include the following courses or equivalent: Biological Sciences 1–2; Physics 1–2; Chemistry 11–12, 22, 51–52. One year of calculus and a course in physical chemistry are normally recommended but may be taken during the work towards the Master's degree.

Required: the general requirements, pages 77–79, including Biochemistry 221–22; Physiology 201; Pharmacology 201, 299–300. The remaining courses may be selected from Biochemistry 224, 241; Chemistry 156; Microbiology 211, 225, 227, 233; Pharmacology 267, 269, 272, 279, 281, 282, 283.

*Doctor of Philosophy fields of study in Pharmacology: Chemotherapy and Molecular Pharmacology, Physiological Disposition of Drugs, Biochemical Pharmacology, and Drug Evaluation.*—See pages 77–78, 79–80 for requirements for the degree.

### 201 Pharmacology (8)

Mandel and Staff

Required course for medical students; open to qualified nonmedical students. Lectures, laboratory, and conferences on interaction of drugs and biological systems as a basis for the rational therapy of disease. Prerequisite: biochemistry and physiology, or approval of Department. (Fall—day)

### 252 Seminar: Clinical Pharmacology (2)

Weiss

Problems in therapeutics, with emphasis on drugs used in treatment of cardiovascular and infectious diseases. Students participate in discussions and preparation of some lectures. Enrollment limited. (1968–69 and alternate years: spring—day)

### 254 Frontiers in Pharmacology (1)

Mandel and Staff

Informal lectures dealing with recent advances and fields of active research in pharmacology. Most of the material is presented by laboratory scientists from neighboring institutions. Open to medical and graduate students. (Spring—day)

### 256 Molecular Pharmacology (2)

F. Hahn

Current theory on action of drugs especially chemotherapeutic agents, at the molecular level. Effect of drugs on biosynthetic processes of the cell with respect to DNA, messenger RNA, transfer RNA, ribosomes, protein, cell wall, and intermediary metabolites. Factors which alter action of drugs, such as drug interactions and resistance. Open to medical and graduate students. (Spring—day)

### 258 Cancer Chemotherapy (1)

Mandel and Staff

Mechanisms by which drugs inhibit the growth of tumor cells. For medical students; open to qualified graduate students. (1968–69 and alternate years: spring—day)

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



- 260 Introduction to Statistical Reasoning (1)** Weiss and Staff  
Application of statistical methods to biological and experimental questions. Emphasis on statistics rather than arithmetic. (Spring—day)
- \*267 Pharmacological Research (arr.)** Staff  
Primarily for properly qualified graduate students. (Fall and spring—as arranged)
- \*269 Pharmacology Seminar (1)** Staff  
Recent advances in pharmacology. For those interested in pharmacological research. Open to qualified nonmedical students. (Fall and spring—day)
- 272 Physiological Disposition of Drugs (3)** Cohn, Davison  
Seminars and lectures. Fate of drugs in biological tissue. Absorption, distribution, chemical alteration, and excretion of drugs; physical, chemical, and biological factors affecting these processes. Open to qualified graduate and medical students. Enrollment limited to 20. Prerequisite: Pharmacology 201. (1967–68 and alternate years: spring—day)
- \*279 Special Topics in Pharmacology (arr.)** Staff  
Selected aspects of drug action. (Fall and spring—day)
- 281 Physiological Techniques in Pharmacology—Lecture (2)** Mazel, Straw  
Physiological techniques for obtaining information on mechanism and site of action of pharmacological agents. Open to qualified graduate and medical students. Enrollment limited to 20. Pharmacology 281 may be taken without 282. Prerequisite: Pharmacology 201. (1967–68 and alternate year: spring—day)
- 282 Physiological Techniques in Pharmacology—Laboratory (2)** Mazel, Straw  
Laboratory course to accompany Pharmacology 281. Prerequisite: Pharmacology 201. Prerequisite or concurrent registration: Pharmacology 281. (1967–68 and alternate years: spring—day)
- 283 Biochemical Techniques in Pharmacology (3)** Cohn, Davison  
Lectures and laboratory. Theory and practice of modern biochemical techniques applicable to study of metabolic fate and mechanism of action of drugs. Limited to graduate students. Prerequisite: Pharmacology 201. (1968–69 and alternate years: spring—day)
- 299–300 Thesis Research (3–3)** Staff  
Required of Master's candidates. (Academic year—as arranged)
- 398 Advanced Reading and Research (arr.)** Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)
- 399 Dissertation Research (arr.)** Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

\* Content differs each time the course is offered; may be repeated once for credit toward a Master's degree.



## Philosophy\*

Professor Thelma Z. Lavine

Associate Professor R. H. Schlagel (Chairman)

Assistant Professors C.H. Pfuntner, W.B. Griffith

*Bachelor of Arts with a major in Philosophy (Field-of-Study).*—Prerequisite: the Arts and Letters curriculum, page 63.

Required: in addition to the general requirements, pages 69–73, the passing of the Philosophy major examination at the end of the senior year. The coordinated knowledge upon which the student will be examined is the following: (1) history of philosophy and (2) problems of philosophy. A proseminar (Philosophy 199–200) assists the student in preparing for the major examination.

*Master of Arts in the field of Philosophy.*—Prerequisite: an undergraduate major in Philosophy at this University or equivalent, as attested by passing this University's major examination in Philosophy; the following courses or equivalent: Philosophy 111–12, 113, 121, 131, and 151.

Required: the general requirements, pages 77–79. As much as possible of the required course work must be in third-group courses. If second-group courses are elected, students are required to do more intensive and extensive work than undergraduates. A general written examination in two areas of Philosophy and an oral examination in the student's special field are required in addition to a Master's thesis of substantial length.

*Master of Arts in the field of Linguistics.*—See pages 77–79, and the departments of Germanic Languages and Literatures, Romance Languages and Literatures, Slavic and Oriental Languages and Literatures.

### FIRST GROUP

#### 51–52 Introduction to Philosophy (3–3)

Problems of modern philosophy in relation to scientific and social developments since the Renaissance. *First half:* theories of knowledge. *Second half:* theories of reality. Philosophy 51 or 52 may be taken independently. (Academic year—day and evening; summer 1967)

Staff

#### 71 Philosophy and Literature (3)

Philosophical foundations of psychoanalytical psychiatry, existentialism, and Marxism and their expression in literature, e.g., in the works of Mann, Kafka, Camus, Sartre, Malraux, Silone, and Koestler. (Spring—day)

Lavine

### SECOND GROUP

#### 111–12 History of Philosophy (3–3)

History of Western philosophy from early Greece to Kant, seen as the development and modification of the Hellenic cultural pattern. (Academic year—day)

Pfuntner

#### 113 History of 19th Century Philosophy (3)

European philosophy from Kant to Nietzsche. (Fall—day)

Lavine

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



- 121 Introduction to Logic (3)** Griffith  
Systematic study of the principles of valid inference with attention to the development of skill in logical analysis and evaluation of arguments, and to the theory of formal systems. (Fall—day)
- 122 Advanced Logic (3)** Griffith  
Theory of logical systems; their applications, e.g., to scientific explanation, computer theory; implications for philosophy of logic. Prerequisite: Philosophy 121 or Mathematics 101, or permission of instructor. (Spring—evening)
- 131 Ethics (3)** Griffith  
Theories of "the good" and "the right" from Plato to Sartre. (Spring—day)
- 132 Social Philosophy (3)** Lavine  
Social philosophies from Luther to Marxism and Fascism. (Spring—day)
- 151 Philosophy of Science (3)** Schlagel  
History and philosophical implications of developments in the physical sciences from the Copernican Revolution to Relativity and Quantum Theory. (Spring—day)
- 152 Epistemology (3)** Schlagel  
Inquiry into the basis and structure of knowledge, the problem of perception, and the meaning and criteria of truth. (Summer 1967)
- 162 Aesthetics (3)** Pfuntner  
Nature of aesthetic experience, problems of appreciation and criticism in the arts, and theories of artistic creation. Emphasis on contemporary arts and criticism. (Fall—evening)
- 172 American Philosophy (3)** Pfuntner  
Philosophies of Peirce, Royce, James, Dewey, Santayana, and Whitehead as representatives of American thought. (Summer 1967)
- 180 Philosophy of History (3)** Lavine  
Critiques of philosophies of history: the idea of progress, historicism, Hegelian-Marxian dialectic, cyclical and social-scientific views. Contemporary problems of historical knowledge. (Fall—day)
- 193 Contemporary European Philosophy (3)** Griffith  
Main currents of 20th century European philosophy: the British analytic movement, positivism, phenomenology, existentialism. (Summer 1967)
- 196 Philosophy of Language (3)** Schlagel  
Philosophical problems pertaining to symbolism, meaning, linguistic reference, logical form, linguistic relativity, etc. Readings from Russell, Langer, Wittgenstein, Ryle, Whorf, Austin, etc. (Fall—day)
- 199-200 Proseminar: Readings in Philosophy (3-3)** Staff  
Conferences and group discussions in preparation for field-of-study major examination. (Academic year—as arranged)



## THIRD GROUP

- 201-2 **Readings and Research** (3-3) Staff  
Advanced readings and reports. Investigation of special problems.  
(Academic year—as arranged)
- 211 **Seminar: Plato** (3) Griffith  
Development of Plato's thought from the early "Socratic" dialogues to the  
later systematic works. (Not offered 1967-68)
- 216 **Seminar: Kant** (3) Lavine  
*Critique of Pure Reason.* (Spring—evening)
- 231 **Seminar: Ethical Theory** (3) Griffith  
(Formerly Seminar: *Foundations of Value Theory*)  
Readings in recent ethical philosophy. (Fall—evening)
- 251 **Seminar: Philosophy of Science** (3) Schlagel  
Intensive study of selected problems in the historical and theoretical foundations of science. (Fall—evening)
- 252 **Seminar: Epistemology** (3) Schlagel  
Study of selected topics in theory of knowledge. (Not offered 1967-68)
- 262 **Seminar: Aesthetics** (3) Pfuntner  
A study of selected problems. (Spring—evening)
- 272 **Seminar: American Philosophy** (3) Pfuntner  
Important American contributions to theories of the self, society, and history. (Not offered 1967-68)
- 280 **Seminar: Philosophy of History** (3) Lavine  
Current issues concerning the problem of historical knowledge. (Not offered 1967-68)
- 299-300 **Thesis Research** (3-3) Staff

### Physical Education, Health, and Recreation for Men\*

*Professors* W.H. Myers (*Emeritus*), R.G. Hanken, V.J. DeAngelis (*Chairman*)  
*Professorial Lecturers* W.D. Thompson, J.J. Miller, Harry Pitt,  
*Associate Professorial Lecturers* J.R. Grinnell, L.R. Tucker  
*Assistant Professor* C.B. Reed  
*Instructors* R.J. Hornfeck, S.J. Korcheck, L.G. Usiskin

This Department includes all the recognized athletic activities of the men students of the University except intercollegiate athletics.

\*The University is not responsible for injuries received in intramural games, or in any of the activities of the departments of Physical Education, Health, and Recreation; and the student assumes full responsibility therefor.

Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.



Two years of Physical Education (Physical Education 1-2 and 11-12) are required of all men for graduation, except those students exempt under the regulations stated on page 62.

A medical examination is required before participation in physical education activities. Sophomore students may elect from the following list of activities: Badminton, Basketball, Golf, Soccer, Softball, Swimming (beginner, intermediate, advanced, life saving), Tennis, Touch Football, and Volleyball.

The student furnishes gymnasium uniforms and personal equipment.

*Bachelor of Science in Physical Education.*—Prerequisite: the Physical Education for Men curriculum, page 66. The requirements for the degree are stated on pages 84-85, 97-99.

*Bachelor of Arts in Education with (1) a major in secondary education combined with a teaching field in Physical Education and (2) a major in elementary education with an area of specialization in Physical Education.*—See pages 84-88, 94.

*Master of Arts in Education with a field in Physical Education.*—See pages 100-103.

## PHYSICAL EDUCATION

### FIRST GROUP

\*1-2 **Freshman Physical Education (1-1)** Staff

Two periods of supervised activity a week. (Academic year—as arranged; summer 1967)

\*11-12 **Sophomore Physical Education (1-1)** Staff

Two periods of supervised activity a week. (Academic year—as arranged; summer 1967)

43 **Physical Education Motor Activities (3)** Reed

(Physical Education 43 and 44 replace former 43-44 (2-2) and 45-46 (2-2))

Organizational techniques, fundamental skills, gymnastics. (Fall—day)

44 **Teaching in Secondary Schools (3)** Hornfeck

(Physical Education 43 and 44 replace former 43-44 (2-2) and 45-46 (2-2))

Individual and dual sports—tennis, golf, swimming, wrestling. (Spring—day)

49 **Human Anatomy (3)** Stallings

Structure of the human body. Basic course for physical education majors; open to nonmajors. Prerequisite: Biological Sciences 1-2. (Fall—day)

50 **Kinesiology (3)** Rochon

Anatomical mechanism of movement, analysis of the action of muscles in sports and daily living. Prerequisite: approved course in anatomy. (Spring—day)

55 **Introduction to Physical Education (2)** Reed

Orientation in the problems of physical education, vocational analysis, scientific foundations, and scope of field (Fall—day)

\* A Physical Education fee of \$4.50 a semester is required for registration in one or more of the activity courses.



**\*†56 Dance Technique and Theory (1)**

Staff

Advanced work in the techniques of contemporary modern dance. Prerequisite: the introductory and intermediate dance electives offered in Physical Education 1-2 and 11-12, or equivalent. (Spring—day; summer 1967—Dance Workshop)

**59-60 Teaching Secondary School Team Sports**

DeAngelis, Korchek

(2 to 4-2 to 4)

Football, basketball, baseball, track and field.

(Academic year—day)

**SECOND GROUP****101 Elementary School Physical Education (3)**

Snodgrass

Current trends; age characteristics and their implications for the organization of school and playground programs. Curriculum, techniques of teaching, evaluation, integration of subject-matter areas. (Spring—day; summer 1967)

**103 History and Principles of Physical Education (3)**

Stallings, DeAngelis

History as it relates to contemporary physical education; aims, objectives, and philosophy of physical education; biology, psychology, and sociology applied to physical education. (Fall—day)

**105 Adapted Physical Education and Physical Examinations (3)**

Rochon

Cause and correction of faulty body mechanics, physical examinations for the detection of postural defects, prescription of exercises, and program adaptation. Prerequisite: Physical Education 49 and 50. (Fall—day)

**107 Teaching Recreational Dance (1 to 2)**

Burtner

Methods and materials for teaching the folk and social forms of dance. (Fall—day)

**†109 Dance Composition I (1 to 2)**

Staff

Basic elements and principles of composition. (Fall—evening)

**†110 Dance Composition II (1 to 2)**

Staff

Advanced problems in composition. (Spring—evening; summer 1967—Dance Workshop)

**113-14 Practice in Teaching Activities (3-3)**

Hanken

Lecture (1 hour), laboratory (4 hours). Principles and methods applied to learning and teaching physical education activities. (Academic year—day)

**115-16 Intramural Program Organization (2-2)**

Korchek

Principles of administration, organization, and supervision in junior high school, senior high school, and college programs. (Academic year—day)

\* A Physical Education fee of \$4.50 a semester is required for registration in one or more of the activity courses.

† Physical Education 56, 109, and 110 replace former 53. Students who have received credit for 53 may not receive credit for 56, 109, or 110.



\*117 **Teaching Modern Dance** (2 to 3) Burtner  
Methods of teaching modern dance; technique, improvisation, and composition. Analysis of accompaniment. Secondary, college, adult levels. (1968-69 and alternate years: fall—evening)

\*118 **Dance Production** (2 to 3) Burtner  
Planning, choreographing, and staging of dance: demonstrations, concerts, musicals, plays, festivals, lighting, costuming, sets, make-up, accompaniment. (1968-69 alternate years: spring—evening)

120 **Repertory** (1) Staff  
Study and performance of completed dance works. (Summer 1967—Dance Workshop)

131 **Tests and Measurements in Physical Education** (3) Reed  
Lecture (2 hours), conference (1 hour). Critical survey of tests in physical activities, methods of test construction, elementary statistics. (Fall—day)

134 **Rhythmic Analysis through Creative Movement** (3) DeBoeck  
Pulse, meter, phrase, simple music notation, and analysis of elementary forms of music composition. Sensory and ideational stimuli, music, poetry, and the visual arts as motivation for improvisation and choreography. Prerequisite: one semester of modern dance or ballet, or equivalent. (Spring—evening)

135-36 **Survey of Dance History** (3-3) Burtner  
Dance from primitive ritual to contemporary folk, art, and ethnic forms. Practical work in dance included. *First half*: prehistoric to 20th century. *Second half*: 20th century. (1967-68 and alternate years: academic year—evening)

138 **Organization and Administration of Physical Education** (3) DeAngelis  
Lecture (2 hours), conference (1 hour). Organization and administration of elementary, secondary, and college programs. Plants, fields, equipment, and programs. (Spring—evening)

158 **Safety Education** (3) Reed  
Liability, prevention, and emergency care of all types of injuries with reference to first aid and athletics. Proper use of personnel, facilities, and equipment. Red Cross certification as an instructor. Prerequisite: Biological Sciences 1-2. (Spring—day)

160 **Safety and Driver Education** (3) Grinnell  
Junior and senior high school curriculum. Emphasis on curriculum in driver education and its content, methods, and techniques of instruction, including practice driving instruction. (Spring—evening)

### THIRD GROUP

201 **Philosophy of Physical Education** (3) Stallings  
Concepts of philosophy and philosophic method applied to objectives, principles, and practice in physical education. (Fall—evening)

\* A Physical Education fee of \$4.50 a semester is required for registration in one or more of the activity courses.



- 202 Motor Learning (3)** Stallings  
Physiological and psychological correlates of motor learning with implications for teaching methods and training schedules. (Spring—evening)
- 211 Problems in Physical Education (3)** Miller  
Lecture (2 hours) conference (1 hour). For experienced teachers. Organization, supervision, and curriculum problems growing out of current issues; program planning policies; competition. (Fall—evening)
- 215 Administration of High School Physical Education and Athletics (3)** DeAngelis  
Lecture (2 hours), conference (1 hour). Administrative issues and problems; best means of solving these problems. (Summer 1967)
- 231 Evaluation in Physical Education (3)** Pitt  
Lecture (2 hours), conference (1 hour). Planning the evaluation program, review of outcomes, analysis of tests and standards, administration and interpretation of tests, guidance. (Fall—evening)
- 240 Adapted Physical Education (3)** Rochon  
Etiology and evolution of orthopedic, neurological, cardiovascular, and other handicapping conditions; adaptation of the physical education program to meet individual needs. (Spring—evening)
- 260 Curriculum Construction in Physical Education and Health (3)**  
Lecture (2 hours), conference (1 hour). Need, planning objectives, factors to be considered in selecting activities, recommended curriculum for various school levels, trends, relationship to cooperating community agencies. (Spring—evening)
- 280 Supervision of Physical Education, Health, and Recreation (3)**  
Lecture (2 hours), conference (1 hour). Purpose and value, principles, prevalent concepts, best accepted techniques. (Summer 1967)
- 297 Advanced Topical Studies (3)** DeAngelis, Stallings  
Individual studies of advanced topics; critique and synthesis of research findings and of literature. May be repeated once for credit. Prerequisite: Education 295. (Fall and spring—as arranged; summer 1967)

## HEALTH

### FIRST GROUP

#### 41 Personal Health and First Aid (1 to 2)

Physical, mental, and social health of the individual—understanding, significance, and promotion. Emphasis on personal health knowledge for the future teacher. First aid training includes Red Cross certification (standard and advanced). (Spring—day) Usiskin



## SECOND GROUP

- 121 **School and Community Health Programs** (3) Castell\*  
Health services, healthful environment, health instruction, sources of material for general health knowledge. (Fall—evening)
- 122 **Methods and Materials for Health Education** (3) Stallings  
Curriculum planning and organization, methodology, selection and use of materials of health education, evaluation, basic health knowledge. (Spring—day)

## THIRD GROUP

- 220 **Problems in Health Education** (3) Miller  
Lecture (2 hours), conference (1 hour). Health needs, policies and program planning, use of community resources, promising practices in the field. (Spring—evening)

## RECREATION

### FIRST GROUP

- 48 **Introduction to Recreation** (2) Reed  
The role of recreation in modern living; current practices in community recreation work; standards of training, experience, and salary; types of leadership. (Spring—day)

### SECOND GROUP

- 132 **Camp Leadership** (2) Snodgrass  
Philosophy and techniques of camp counseling; survey of organization and programs including outdoor education. Open to nonmajors. (Spring—day)
- 151-52 **Recreational Leadership Activities** (3-3) Tucker  
Laboratory practice in the basic skills of crafts, music, arts, physical and social activities. *First half:* preschool-age child. *Second half:* teenage and adult. (1967-68 and alternate years: academic year—evening)
- 161 **Community Organization for Recreation** (3) Thompson  
Lecture (2 hours), conference (1 hour). Resources, principles, and methods. (1968-69 and alternate years)
- 162 **Administration of Community Recreation Programs** (3) Thompson  
Lecture (2 hours), conference (1 hour). Legislation, program, area, facilities, leadership, finance, and public relations. (1968-69 and alternate years)

\* Dr. Castell is Assistant Clinical Professor of Medicine in the School of Medicine.



## THIRD GROUP

## 250 Recreation and Outdoor Education (3)

Thompson

Lecture (2 hours), conference (1 hour). Current trends in philosophy, principles, practices, and programs for outdoor education, camping, and community-school relationships. (Summer 1967)

**Physical Education, Health, and Recreation for Women\***

*Professors* Elizabeth Burtner, Loretta Stallings (*Chairman*)

*Associate Professors* Lyndale George, Jeanne Snodgrass

*Associate Professorial Lecturer* Evelyn DeBoeck

*Assistant Professors* Gayle Clapp, Felicia Rochon, Maida Withers, Donna Abbey

*Instructors* Nan Smith, Janet Dearcopp, Nancy Johnson

*Lecturer* Calva Collier

Two years of Physical Education (Physical Education 1-2 and 11-12) are required of all women for graduation, except students exempt under regulations stated on page 62. Students whose physical examinations indicate the desirability of remedial or restricted activity are assigned to programs especially adapted to their needs.

The required costume for Physical Education classes may be purchased at the University Book Store.

*Bachelor of Science in Physical Education.*—Prerequisite: the Physical Education for Women curriculum, page 66. The requirements for the degree are stated on pages 84-85, 99-100.

Within the curriculum leading to the degree of Bachelor of Science in Physical Education there is opportunity for specializing in dance, health education, or recreation.

*Bachelor of Arts in Education with (1) a major in secondary education combined with a minor teaching field in Physical Education and (2) a major in elementary education with an area of specialization in Physical Education.*—See pages 84-88, 94.

*Bachelor of Arts in Education with a teaching field in Dance.*—Prerequisite: the Education curriculum, pages 65-66.

Required: the Dance option and the professional courses listed on pages 96-97.

*Master of Arts in Education with a field in Physical Education.*—See pages 100-103.

## PHYSICAL EDUCATION

## FIRST GROUP

## †1-2 Freshman Physical Education (1-1)

Staff

Two periods a week chosen from the activities offered each semester. (Academic year—day; summer 1967)

\* The University is not responsible for injuries received in intercollegiate or intramural games, or in any of the activities of the departments of Physical Education, Health, and Recreation; and the student assumes full responsibility therefor.

Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.

† A Physical Education fee of \$4.50 a semester is required for registration in one or more of the activity courses.



- \*11-12 **Sophomore Physical Education** (1-1) Staff  
Two periods a week chosen from the activities offered each semester.  
(Academic year—day; summer 1967)
- \*43-44 **Physical Education Motor Activities** (2 to 3-2 to 3) Staff  
Techniques, fundamental skills, rules, and organization. (Academic year—day)
- 49 **Human Anatomy** (3) Stallings  
Structure of the human body. Basic course for physical education majors; open to nonmajors. Prerequisite: Biological Sciences 1-2. (Fall—day)
- 50 **Kinesiology** (3) Rochon  
Anatomical mechanism of movement, analysis of the action of muscles in sports and daily living. Prerequisite: approved course in anatomy. (Spring—day)
- 51-52 **Teaching Physical Education Activities** (2 to 3-2 to 3) Staff  
*First half:* basketball, tennis, and badminton. *Second half:* softball and archery. (1967-68 and alternate years: academic year—day)
- \*†56 **Dance Technique and Theory** (1) Staff  
Advanced work in the techniques of contemporary modern dance. Prerequisite: the introductory and intermediate dance electives offered in Physical Education 1-2 and 11-12, or equivalent. (Spring—day; summer 1967—Dance Workshop)

## SECOND GROUP

- 101 **Elementary School Physical Education** (3) Snodgrass  
Current trends; age characteristics and their implications for the organization of school and playground programs. Curriculum, techniques of teaching, evaluation, integration of subject-matter areas. (Spring—day; summer 1967)
- 103 **History and Principles of Physical Education** (3) Stallings, DeAngelis  
History as it relates to contemporary physical education; aims, objectives, and philosophy of physical education; biology, psychology, and sociology applied to physical education. (Fall—day)
- 105 **Adapted Physical Education and Physical Examinations** (3) Rochon  
Cause and correction of faulty body mechanics, physical examinations for the detection of postural defects, prescription of exercises, and program adaptation. Prerequisite: Physical Education 49 and 50. (Fall—day)
- 107 **Teaching Recreational Dance** (1 to 2) Burtner  
Methods and materials for teaching the folk and social forms of dance. (Fall—day)

\* A Physical Education fee of \$4.50 a semester is required for registration in one or more of the activity courses.

† Physical Education 56, 109, and 110 replace former 53. Students who have received credit for 53 may not receive credit for 56, 109, or 110.



- \*109 **Dance Composition I** (1 to 2) Staff  
Basic elements and principles of composition. (Fall—evening)
- \*110 **Dance Composition II** (1 to 2) Staff  
Advanced problems in composition. (Spring—evening; summer 1967—Dance Workshop)
- 111-12 **Teaching Physical Education Activities** (2 to 3-2 to 3) Staff  
*First half:* field hockey, soccer, and speedball. *Second half:* gymnastics, tumbling, and track and field. (1968-69 and alternate years: academic year—day)
- †113-14 **Practice in Teaching Activities** (2 to 4-2 to 4) Staff  
Principles and methods applied to teaching physical education activities. Supervised laboratory. (Academic year—day)
- †117 **Teaching Modern Dance** (2 to 3) Burtner  
Methods of teaching modern dance: technique, improvisation, and composition. Analysis of accompaniment. Secondary, college, adult levels. (1968-69 and alternate years: fall—evening)
- †118 **Dance Production** (2 to 3) Burtner  
Planning, choreographing, and staging of dance: demonstrations, concerts, musicals, plays, festivals, lighting, costuming, sets, make-up, accompaniment. (1968-69 and alternate years: spring—evening)
- 119 **Creative Dance for Children** (3) Withers  
Exploration and understanding of creative movement for children. Evaluation of methods and materials. Dance for children with special education problems. (1968-69 and alternate years: spring—evening)
- 120 **Repertory** (1) Staff  
Study and performance of completed dance works. (Summer 1967—Dance Workshop)
- 131 **Tests and Measurements in Physical Education** (3) Reed  
Lecture (2 hours), conference (1 hour). Critical survey of tests in physical activities, methods of test construction, elementary statistics. (Fall—day)
- 134 **Rhythmic Analysis through Creative Movement** (3) DeBoeck  
Pulse, meter, phrase, simple music notation, and analysis of elementary forms of music composition. Sensory and ideational stimuli, music, poetry, and the visual arts as motivation for improvisation and choreography. Prerequisite: one semester of modern dance or ballet, or equivalent. (Spring—evening)
- 135-36 **Survey of Dance History** (3-3) Burtner  
Dance from primitive ritual to contemporary folk, art, and ethnic forms. Practical work in dance included. *First half:* prehistoric to 20th century. *Second half:* 20th century. (1967-68 and alternate years: academic year—evening)

\* Physical Education 56, 109, and 110 replace former 53. Students who have received credit for 53 may not receive credit for 56, 109, or 110.

† A Physical Education fee of \$4.50 a semester is required for registration in one or more of the activity courses.



- 138 **Organization and Administration of Physical Education** (3) George  
 Organization and administration of elementary, secondary, and college programs. Plants, fields, equipment, and programs. (Spring—as arranged)
- 158 **Safety Education** (3) Reed  
 Liability, prevention, and emergency care of all types of injuries with reference to first aid and athletics. Proper use of personnel, facilities, and equipment. Red Cross certification as an instructor. Prerequisite: Biological Sciences 1-2. (Spring—day)
- 160 **Safety and Driver Education** (3) Grinnell  
 Junior and senior high school curriculum. Emphasis on curriculum in driver education and its content, methods, and techniques of instruction, including practice driving instruction. (Spring—evening)

### THIRD GROUP

- 201 **Philosophy of Physical Education** (3) Stallings  
 Concepts of philosophy and philosophic method applied to objectives, principles, and practice in physical education. (Fall—evening)
- 202 **Motor Learning** (3) Stallings  
 Physiological and psychological correlates of motor learning with implications for teaching methods and training schedules. (Spring—evening)
- 211 **Problems in Physical Education** (3) Miller  
 Lecture (2 hours), conference (1 hour). For experienced teachers. Organization, supervision, and curriculum problems growing out of current issues; program planning policies; competition. (Fall—evening)
- 215 **Administration of High School Physical Education and Athletics** (3) DeAngelis  
 Lecture (2 hours), conference (1 hour). Administrative issues and problems; best means of solving these problems. (Summer 1967)
- 231 **Evaluation in Physical Education** (3) Pitt  
 Lecture (2 hours), conference (1 hour). Planning the evaluation program, review of outcomes, analysis of tests and standards, administration and interpretation of tests, guidance. (Fall—evening)
- 240 **Adapted Physical Education** (3) Rochon  
 Etiology and evolution of orthopedic, neurological, cardiovascular, and other handicapping conditions; adaptation of the physical education program to meet individual needs. (Spring—evening)
- 260 **Curriculum Construction in Physical Education and Health** (3)  
 Lecture (2 hours), conference (1 hour). Need, planning, objectives, factors to be considered in selecting activities, recommended curriculum for various school levels, trends, relationship to cooperating community agencies. (Spring—evening)
- 271-72 **Dance Notation** (3-3) Withers  
 Study of Labanotation. *First half*: leads to elementary certification. *Second half*: intermediate level. Special project: study and reconstruction of



notated works of 20th century choreographers of American modern dance. (1967-68 and alternate years: academic year—evening)

\* 273 **Advanced Choreography** (3)

Burtner

Advanced problems in creative movement and composition. Choreographing of group and solo works in dance. (Fall and spring—as arranged; summer 1967)

275-76 **Dance in Special Education** (3-3)

Dance techniques, improvisation, and composition for the mentally retarded, emotionally disturbed, and physically handicapped. *First half:* lecture and observation. *Second half:* guided teaching. Prerequisite: Physical Education 107, 117 or 119, or permission of instructor. (1967-68 and alternate years; academic year—evening)

\* 277 **Dance Expressions in Selected Cultures** (3)

Burtner

Study of ethnic forms of dance through reading and participation. Study may be done in the United States or the country of the dance being studied. (Fall and spring—as arranged)

280 **Supervision of Physical Education, Health, and Recreation** (3)

Lecture (2 hours), conference (1 hour). Purpose and value, principles, prevalent concepts, best accepted techniques. (Summer 1967)

\* 297 **Advanced Topical Studies** (3)

DeAngelis, Stallings

Individual studies; critique and synthesis of research findings and of literature. Prerequisite: Education 295. (Fall and spring—as arranged; summer 1967)

## HEALTH

### FIRST GROUP

41 **Personal Health and First Aid** (1 to 2)

Reed

Physical, mental, and social health of the individual—understanding, significance, and promotion. Emphasis on personal health knowledges for the future teacher. First aid training includes Red Cross certification (standard and advanced). (Spring—day)

### SECOND GROUP

121 **School and Community Health Programs** (3)

Castell†

Health services, healthful environment, health instruction, sources of material for general health knowledge. (Fall—evening)

122 **Methods and Materials for Health Education** (3)

Stallings

Curriculum planning and organization, methodology, selection and use of materials of health, education, evaluation, basic health knowledge. (Spring—day)

\* May be repeated for credit.

† Dr. Castell is Assistant Clinical Professor of Medicine in the School of Medicine.



## THIRD GROUP

- 220 **Problems in Health Education** (3) Miller  
Lecture (2 hours), conference (1 hour). Health needs, policies and program planning, use of community resources, promising practices in the field. (Spring—evening)

## RECREATION

## SECOND GROUP

- 132 **Camp Leadership** (2) Clapp  
Philosophy and techniques of camp counseling; survey of organization and program including outdoor education. Open to nonmajors. (Spring—day)

- 151-52 **Recreational Leadership Activities** (3-3) Tucker  
Laboratory practice in the basic skills of crafts, music, arts, physical and social activities. *First half*: preschool-age child. *Second half*: teenage and adult. (1967-68 and alternate years: academic year—evening)

- 161 **Community Organization for Recreation** (3) Thompson  
Lecture (2 hours), conference (1 hour). Resources, principles, and methods. (1968-69 and alternate years)

- 162 **Administration of Community Recreation Programs** (3) Thompson  
Lecture (2 hours), conference (1 hour). Legislation, program, area, facilities, leadership, finance, and public relations. (1968-69 and alternate years)

## THIRD GROUP

- 250 **Recreation and Outdoor Education** (3) Thompson  
Lecture (2 hours), conference (1 hour). Current trends in philosophy, principles, practices, and programs for outdoor education, camping, and community-school relationships. (Summer 1967)

## Physics\*

Professors G.M. Koehl, Herbert Jehle, H.H. Hobbs (*Chairman*), Julian Eisenstein  
Associate Professors Otto Bergmann, A.J. Zuchelli, Francisco Prats  
Associate Professorial Lecturers H.H. Landon, Jr., Herbert Rabin, W.J. Con-  
dell, Jr.  
Assistant Professors Margaret Montzka, J.M. Harrison, N.K. Khatcheressian  
Assistant Professorial Lecturers J.N. Tevis, K.F. Oerlein  
Instructors C.G. Dease, Mohammad Fatemi

\* Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.



*Bachelor of Arts or Bachelor of Science in Physics (Departmental).*—Prerequisite: the Arts and Letters or the Science curriculum, respectively, pages 63–64, including Physics 1, 30, 31–32, 51–52; Chemistry 11–12; Mathematics 21, 22, 23, and 24.

Required: for the Bachelor of Arts degree and the Bachelor of Science degree: the general requirements, pages 69–73, including Physics 161, 162, 163, 164, 165–66, 167–68, plus six hours in Mathematics selected from the following: Mathematics 124, 134, 139, 140, and 142.

*Master of Science in the field of Physics.*—Prerequisite: a Bachelor's degree with a major in Physics at this University, or equivalent.

Required: the general requirements, pages 77–79, including Physics 231, 232, 233–34, 235, 236, 291, plus one of the following: 241, 242, 243, 244, 245, or 251–52.

*Doctor of Philosophy fields of study in Physics: Experimental Solid State Physics (Behavior of Electrons in Solids, Growth and Perfection of Crystals, Magnetic Properties of Solids at Low Temperatures, Mössbauer Effect), Theoretical Physics (Biophysics, Elementary Particles, Field Theory, General Relativity, Magnetic and Optical Properties of Solids, Molecular Structure, Nuclear Scattering, Quantum Mechanics), and Electron Optics.*—See pages 77–78, 79–80 for requirements for the degree.

*Doctor of Philosophy fields in Biophysics (an interdepartmental field offered by the departments of Physics and Physiology): Electron Microscopy, Membrane Physics, and Membrane Transport.*—See pages 77–78, 79–80 for requirements for the degree.

*Bachelor of Arts in Education with a teaching field in Physics.*—Prerequisite: the Education curriculum, pages 65–66.

Required: the physics option and the professional courses listed on pages 96–97.

## FIRST GROUP

### 1 General Physics (4)

Staff

Topics in classical physics which form a foundation for modern physics. Prerequisite: two years of college preparatory mathematics or concurrent registration for Mathematics 6. Laboratory fee, \$11. (Fall and spring—day and evening; summer 1967)

### 2 General Physics (4)

Staff

Electricity, magnetism, and selected topics from modern physics. Prerequisite: Physics 1 or equivalent. Laboratory fee, \$11. (Fall and spring—day and evening; summer 1967)

### 30 General Physics (4)

Staff

Lecture (2 hours), recitation (1 hour), laboratory (2½ hours). Primarily topics from mechanics and electricity. Prerequisite: Physics 1 or consent of adviser, and one semester of calculus. Laboratory fee, \$11. (Spring—day and evening)

### 31–32 Introduction to Theoretical Physics (2–2)

Staff

Theoretical structure of physics, emphasis on appropriate analytical techniques. Prerequisite: one year of calculus and Physics 30. (Academic year—as arranged)

### 51–52 Introduction to Experimental Physics (2–2)

Staff

Experiments and lectures on the basic phenomena of physics and techniques of experimentation. Prerequisite: Physics 2 or 30, and one year of calculus. Material fee, \$11 a semester. (Academic year—day and evening)



## SECOND GROUP\*

- 116 **Quantum and Solid State Physics** (3) Staff  
Primarily for engineers. Prerequisite: Physics 32, 52; Mathematics 111.  
(Spring—evening; Summer 1967)
- 151-52 **Intermediate Laboratory** (2-2) Staff  
Independent advanced work to introduce student to laboratory and shop techniques and the use of specialized instruments. Prerequisite: Physics 51-52. Laboratory fee, \$11 a semester. (Academic year—as arranged)
- 153 **Intermediate Laboratory** (3) Staff  
Experimental projects in atomic physics. (Not offered 1967-68)
- 161 **Mechanics I** (3) Staff  
Mechanics of mass points and rigid bodies. Newton's Laws, conservation laws, Euler's equations, inertia tensor, small vibrations, and elements of Lagrange's and Hamilton's equations. (Fall—as arranged)
- 162 **Mechanics II** (3) Staff  
Basic aspects of elasticity and fluid dynamics, strain tensor, stress tensor, equations of equilibrium, elastic waves, ideal and viscous fluids.  
(Spring—as arranged)
- 163 **Optics** (3) Staff  
Oscillations and waves, energy and momentum of the electromagnetic field, interference, diffraction, geometrical optics, optics of crystals and other media, dispersion. (Fall—as arranged)
- 164 **Thermodynamics** (3) Staff  
Basic principles of thermodynamics, reversible changes, applications to simple systems, thermodynamic potentials, phase equilibrium.  
(Spring—as arranged)
- 165-66 **Electromagnetic Theory** (3-3) Staff  
Development of Maxwell's field equations using vector and tensor calculus, electrostatics, stationary and nonstationary phenomena, basic circuit theory, electromagnetic waves and radiation. (Academic year—as arranged)
- 167-68 **Modern Physics** (3-3) Staff  
Experimental basis of modern physics; introduction to quantum mechanics and statistical mechanics with applications to atomic and nuclear physics.  
(Academic year—as arranged; summer 1967—Physics 167)
- 170 **Elementary Solid State Physics** (3) Staff  
Dielectric and magnetic properties of solids, behavior of electrons in metals and semi-conductors, lattice defects. (Spring—evening; summer 1967)
- 172 **Biophysics** (3) Jehle  
Molecular basis of biophysics, biosynthesis, and reproduction.  
(Spring—as arranged)

\* Physics 31-32 or equivalent, and consent of a departmental adviser are prerequisite to all second-group courses.



**175 Nuclear Physics (3)**

Landon

Structure and stability of atomic nuclei, nuclear transformations and reactions, radiations of nuclei, fission. (Fall—as arranged)

**THIRD GROUP\*****231 Electromagnetic Theory: Macroscopic Effects (3)**

Staff

Aspects of electromagnetism having to do with fields in the vacuum and in media, their determination in terms of physical boundary conditions and their effects upon charges and matter; definition of field quantities, experimental field relations, solutions for the fields, effects of dielectrics and magnetic media, time dependent solutions, and basic aspects of optics. (Fall—as arranged)

**232 Advanced Mechanics (3)**

Staff

Analytic methods of mechanics as a basis for modern theory: variational principles, Lagrange's equations, Hamiltonian formulation, canonical transformations, classical perturbation theory, transition to continuum. (Spring—as arranged)

**233-34 Quantum Mechanics (3-3)**

Staff

General aspects of quantum mechanics with emphasis upon the developmental principles involved. Operators, representations and transformation theory, Schrodinger and Heisenberg pictures, angular momentum, perturbation theory, scattering theory. (Academic year—as arranged)

**235 Special Relativity (3)**

Staff

Application of relativistic concepts to the basic fields of physics: space and time, tensors and covariant mechanics of point particles, covariant form of electromagnetism, relativistic variational principles, relativistic quantum equations. (Fall—as arranged)

**236 Electromagnetic Theory: Electrodynamics and Radiative Effects (3)**

Staff

Lienard-Wiechert potentials, multipole fields, covariant methods, the self-field problem, and classical radiation theory. (Spring—as arranged)

**241 Statistical Mechanics (3)**

Atomic configurations under thermodynamic conditions using partition functions and cluster expansion techniques; ideal and nonideal gases; electron plasmas; changes of state. (Fall—as arranged)

**242 Atomic and Molecular Structure (3)**

Jehle

Structure of atoms and molecules, energy levels, binding energy, optical activity. Hartree and Hartree-Fock equations, spin-effects, rotational and vibrational effects, paramagnetic resonance, chemical binding. (Spring—as arranged)

**243 Solid State Physics: Structure and Binding (3)**

Eisenstein

Atomic structure of solids and analysis of the binding of crystals. Crystal-line forms and symmetries, atomic vibrations and specific heats, sound and optical propagation, crystalline defects. (Fall—as arranged)

**244 Solid State Physics: Electronic Processes in Metals (3)**

Zuchelli

Phenomena in metals and semi-conductors determined by the electronic states allowed: binding, specific heats, magnetic properties, transport

\* Consent of a departmental graduate adviser is required for admission to all third-group courses.



phenomena. Independent particle approximation and many-body aspects are discussed. (1967-68 and alternate years; spring—as arranged)

- 245 **Quantum Electrodynamics: Theory and Applications** (3) Zuchelli  
A presentation of the lower order effects depending upon the quantal nature of the electromagnetic field: Hamiltonian formulation and field quantization, perturbation calculations, Compton effect, photoelectric effect, electron-electron scattering, pair creation and annihilation, indices of refraction, divergence difficulties. (1968-69 and alternate years)
- 246 **Quantum Field Theory** (3) Bergmann  
Covariant presentation of general theory of quantized fields, Boson and Fermion fields, theory of S-matrix, dispersion relations, and renormalization program. (1967-68 and alternate years: spring—as arranged)
- 247 **Nuclear Theory** (3) Prats  
(Formerly *Quantum Theory of Many-body Systems*)  
Nuclear interactions, nuclear models, theory of nuclear reactions, pion physics and weak interactions. (Fall—as arranged)
- 248 **Elementary Particles** (3) Jehle  
Scalar, vector, and spinor fields and their particle aspects, weak and strong interactions, symmetry properties and conservation laws. (1968-69 and alternate years)
- 249 **Statistical Processes** (3) Zuchelli  
Extension of statistical concepts to irreversible processes. Ergodic behavior, classical and quantum approaches to irreversible effects in large systems, master equations, recurrence paradox and development of thermodynamic concepts. (Fall—as arranged)
- 250 **Selected Topics in Modern Physics** (3) Staff  
Complements the established curriculum by affording formal instruction in topics of immediate interest to the development of physics and in particular to the members of the graduate research group. May be repeated for credit with permission of graduate adviser. (Spring—as arranged)
- 251-52 **Laboratory** (2-2) Staff  
Individual work on special topics. Laboratory fee, \$11 a semester. (Academic year: Saturdays—as arranged)
- 254 **General Theory of Relativity** (3)  
Physical principles and mathematical methods underlying Einstein's field equation, geodesic equations of motion, checks of the theory, action principle, conservation laws, perturbation theory, gravitational radiation theory, relativistic cosmology. (Spring—as arranged)
- 291 **Seminar** (1) Staff  
Individual investigation of special problems. All students registered for Master's degree in physics are expected to attend this seminar during residence for the degree, and to take part in its programs. Credit for participation in the seminar work is obtained during the last two semesters of residence; this credit, however, is based upon the seminar work during the entire period of residence. May be repeated once for credit. (Fall and spring—evenings)



299-300 **Thesis Research (3-3)**

(Academic year—as arranged; summer 1967)

Staff

**FOURTH GROUP**398 **Advanced Reading and Research (arr.)**

Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

Staff

399 **Dissertation Research (arr.)**

Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

Staff

**Physiology\****Professor C.S. Tidball (Chairman)**Professorial Lecturers L.L. Langley, Leonard Laster**Associate Professors Hortense Louckes (Research), Elizabeth Tidball (Research), Shirley Johnson**Associate Professorial Lecturers P.G. Nelson, R.J. Podolsky, W.A. Hagins, Edmund Sonnenblick, Glenn Mortimore**Assistant Professors Marie Cassidy, P.T. Ridley, E.O. Cirpili (Visiting), Elizabeth Stephenson, Robert Levy, T.K. Chowdhury, Brunhild Stuerckow**Assistant Professorial Lecturers Richard Moore, W.L. Haskell, Carl-Eric Elwin, John Ross, Jr.**Special Lecturer D.P. Rall**Master of Science in the field of Physiology.*—Prerequisite: a Bachelor's degree. No major is specified, but the undergraduate program must have included the following courses or equivalent: Biological Sciences 1-2; Chemistry 11-12, 22, 51-52; Mathematics 21, 22; Physics 1-2.

Required: the general requirements, pages 77-79. In addition to the thesis, the thirty hours of required work should include Physiology 201, 221, and at least three semester hours of research (Physiology 295).

*Doctor of Philosophy fields of study in Physiology: Applied Physiology, Cardiovascular Physiology, Cellular Physiology, Endocrine Physiology, Gastrointestinal Physiology, Neurophysiology, Renal Physiology, and Respiratory Physiology.*—See pages 77-78, 79-80 for requirements for the degree.*Doctor of Philosophy fields in Biophysics (an interdepartmental field offered by the departments of Physiology and Physics): Electron Microscopy, Membrane Physics, and Membrane Transport.*—See pages 77-78, 79-80 for requirements for the degree.

Staff

†201 **Physiology (8)**

Lecture (6 hours), laboratory (6 hours), conference (2 hours). Cellular, organ system, and applied mammalian physiology. Prerequisite for graduate students: Anatomy 201 or equivalent, Biological Sciences 104, Biochemistry 201 or 221-22 (Biochemistry 222 may be taken concurrently), or consent of the Chairman of the Department. Nonmedical students

\* Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.

† Required course for medical students; open to qualified graduate students. Physiology 201 or equivalent is prerequisite to all other courses in Physiology.



please note that the first meeting of the course occurs one week before the start of University campus classes. (Spring—day)

\*221 **Seminar (1)**

Stephenson

Staff and student presentations from literature. Present work discussed; experimental design and scientific deduction evaluated. Topics to be announced. Prerequisite: a reading knowledge of French or German. (Fall and spring—day)

231 **Advanced Laboratory (2)**

Ridley

Preparation and performance of such experiments as microelectrode implantation, pulmonary function studies, heart-lung preparation, and a supervised individual problem. Enrollment limited to 12 students. (Fall—day)

251 **History of Medicine (1)**

E. Tidball

Lecture 1 hour a week. Survey of the great contributors to physiology and medicine in the context of the times in which they lived and worked. (Fall—day)

253 **Clinical Applications of Physiology (1)**

C. Tidball

Conference 1 hour a week. Special emphasis on acid-base physiology and fluid balance physiology and their relation to clinical problems. (Fall—day)

255 **Introduction to Electrocardiography (1)**

Caceres†

Lecture 1 hour a week. Offered jointly by Department of Physiology and the Public Health Service Instrumentation Field Station. Provides basic understanding of cardiac electrical activity, means used to record it, and application of these principles to diagnosis of cardiac disease. (Fall—day)

257 **Evaluation of Medical Literature (1)**

Cassidy

Conference 1 hour a week. Designed to provide the medical student with criteria for analyzing published medical and scientific reports as an adjunct to his self-educational efforts. (Fall)

259 **Introduction to Electron Microscopy (3)**

Cassidy

Lecture (2 hours), laboratory as arranged. Basic theory of electron microscopy and its application to biological investigative studies. Limited registration. Admission by permission of instructor. (Fall—day)

261 **Gastrointestinal Physiology (2)**

Louckes

Lecture or conference 2 hours a week. Physiological approach to such clinical problems as peptic ulcer, malabsorption, ulcerative colitis, hepatitis, and others. (Not offered 1967–68)

262 **Cardiovascular Physiology (2)**

E. Tidball

Lecture or conference 2 hours a week. An overview of cardiovascular physiology at an advanced level. (Fall—day)

263 **Endocrine Physiology (2)**

Mortimore

Lecture or conference 2 hours a week. Basic physiology underlying clinical derangements involving abnormal endocrine function. (Not offered 1967–68)

\* Content differs each time the course is offered; may be repeated for credit.  
† Dr. Caceres is Associate Professor of Medicine in the School of Medicine.



- 264 Introduction to Experimental Medicine (2)** C. Tidball  
Lecture or conference 2 hours a week. Recent research contributions to a better understanding of medicine. (Fall—day)
- 265 Pathophysiology of Liver Disease (2)** Zimmerman  
Biochemical and physiological alterations in hepatic derangements. (1967-68 and every third year: fall—day)
- 271 Electronic Instrumentation (3)** Chowdhury  
Lecture (2 hours), laboratory (2 hours). Fundamentals of electronics and their application to the measurement of physiological phenomena. Prerequisite: Mathematics 22; Physics 1, 2; and consent of instructor. (1967-68 and alternate years: fall—day)
- \*295 Research (arr.)** Staff  
By special arrangement with individual Staff members. Approximately 4 clock hours in the laboratory for each semester hour credit. (Fall and spring—as arranged)
- 299-300 Thesis Research (3-3)**
- 398 Advanced Reading and Research (arr.)** Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)
- 399 Dissertation Research (arr.)** Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

## Political Science†

*Professors* J.W. Brewer, W.H. Kraus (*Chairman*), Kurt London, R.E. Purcell, H.M. Stout, H.L. LeBlanc, Benjamin Nimer, Bernard Gordon (*Visiting Research*)

*Professorial Lecturers* F.M. Riddick, F.L. Hadsel, Arturo Morales-Carrion, Paul Dolan

*Associate Professors* R.S. Jordan, H.C. Hinton

*Associate Professorial Lecturers* William Lewis, D.E. Nuechterlein, Donald Robinson, Paul Guinn

*Assistant Professors* J.A. Morgan, Jr., Bernard Reich, C.F. Elliott, Don Allensworth, A.S. Banks (*Research*)

*Assistant Professorial Lecturers* George Chacko, G.W. Grayson, Jr., C.A. Linden, R.H. Neuman

*Bachelor of Arts with a major in Political Science (Departmental).*—Prerequisite: the Arts and Letters curriculum, page 63, including Political Science 5-6.

Required: in addition to the general requirements, pages 69-73, thirty semester hours from the following groups distributed as follows: twelve hours from Group A; six hours from Group B; six hours from Group C; and six additional hours from

\* Content differs each time course is offered; may be repeated for credit.

† Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.



any group or groups. The student will normally complete all six hours of any full-year course which he selects.

Group A: Political Science 111, 112, 117-18, 121-22. Group B: Political Science 171, 172, 181-82. Group C: Political Science 104, 125, 145, 146, 151-52. Group D: Political Science 107, 113, 119-20, 141, 167, 177, 178, 190, 191, 192, 193, 194, 199. American Thought and Civilization 101 *American Civilization* is recommended as a senior-year elective for Political Science majors.

*Bachelor of Arts with a major in Latin American Civilization (Field-of-Study).*—See Department of History.

*Master of Arts in the field of Political Science.*—Prerequisite: a Bachelor of Arts degree with a major in Political Science at this University (or equivalent major elsewhere) with a B average (or better) in the major.

Required: the general requirements, pages 77-79. The thirty hours of required work must be approved in advance by the Adviser.

*Master of Arts in the field of Latin American Civilization.*—See Department of History.

*Doctor of Philosophy fields of study in Political Science: American Political Process and Behavior, Comparative Government and Politics, Constitutional Law and Judicial Politics, International Law, International Politics, International Organization, Political Theory (Normative and Empirical), State and Urban Politics, The Presidency and the Administrative Establishment, U.S. Foreign Policy; and Politics of Latin America, Soviet Union, Eastern Europe, Western Europe, Far East, South and Southeast Asia, Africa (south of Sahara), Middle East.*—See pages 77-78, 79-80 for requirements for the degree.

*Doctor of Philosophy fields of study in International Relations* combine work in Economics, History, and Political Science.

*Bachelor of Arts with a major in International Affairs.*—See page 328.

*Bachelor of Arts with a major in Public Affairs (Politics Option).*—Prerequisite: the Public Affairs curriculum, page 68.

Required: the general requirements, pages 138-41, including Economics 102, 121, 161-62; History 175-76; and Political Science 104, 111, 120, 121-22, 145, 146, 151-52.

*Master of Arts in the field of International Affairs,* see pages 328-29.

*Master of Arts in the field of Public Affairs with a specialization in Domestic Politics.*—See page 329.

## FIRST GROUP

### \*5-6 Introduction to Political Science (3-3)

Staff

(Replaces former Political Science 1 and 9-10)

*First half:* structure, powers, and processes of the American political system—Congress, the President, and the Supreme Court; elections, political parties, and pressure groups; state and local government. *Second half:* nature and study of politics—theories, forms, and processes of political systems; international relations and political ideologies. (*First half:* fall—day; spring—evening. *Second half:* fall—evening; spring—day.)

### 9-10 Government of the United States (3-3)

Staff

(Offered last time summer 1967)

\* Political Science 5-6 is prerequisite to all second-group courses.



## SECOND GROUP\*

- 101 Far East in the Modern World (3)** Michael  
General character of Far Eastern societies and their response to the impact of America, Europe, and Russia; American policy in Far East and influence of world communism. (Fall—day)
- 104 State and Local Governments (3)**  
State, municipal, and local governmental forms, operations, and problems; policy formulation and administration; forces of practical politics. (Spring—day)
- 107 Problems in Modern Political Thought (3)** Elliott, Kraus  
Development of democratic political institutions and analysis of main ideological changes during the 19th and 20th centuries. Emphasis on the rise of Socialism and Communism. (Spring—day; summer 1967)
- 111 Comparative Government and Politics (3)** Stout, Elliott, Gyorgy  
Introduction to government and politics of the principal constitutional democracies of Western Europe: Great Britain and France. (Fall—evening; summer 1967)
- 112 Comparative Government and Politics (3)** Stout, Elliott, Gyorgy  
Introduction to government and politics of the principal political systems of Central and Eastern Europe: Germany and the Soviet Union. (Spring—evening; summer 1967)
- 113 Political Problems of the British Commonwealth (3)** Stout  
From Colonial Empire to modern Commonwealth: questions of equal partnership; governments and policies in principal Commonwealth states; problems of new states in Asia and Africa. (Fall—day)
- 115 Government and Politics in Eastern Europe (3)**  
Study of contemporary social and ethnic structures, governmental systems, and international position of East European satellites. Emphasis on post-World War II political evolution and present status of Soviet satellite nations. (Summer 1967—offered only in Communist Affairs program)
- 117-18 Political Theory: Nature and Growth of Western Political Thought (3-3)** Kraus  
*First half:* Antiquity to Middle Ages; forging Western political tradition.  
*Second half:* Renaissance and Reformation to recent times. Theoretical foundations of the modern state: morals and politics, sovereignty, absolutism, resistance; liberalism, democracy, conservatism. (Academic year—day)
- 119-20 Foundations of American Democracy (3-3)** Brewer, Morgan, Allensworth  
Introduction to political thought in the United States from colonial times to the present. (Academic year—day; summer 1967)
- 121-22 U.S. Constitutional Law and Politics (3-3)** Morgan  
(Formerly *The Constitution of the United States*)  
*First half:* separation of powers, federal-state relationships, economic reg-

\* Political Science 5-6 is prerequisite to all second-group courses.



ulation. *Second half*: political and civil rights. (Academic year—evening)

**125 Legislative Organizations (3)**

Riddick

Congress: constitutional aspects, legal analysis of make-up, political organization. Political and parliamentary procedures used in the preparation and enactment of legislation. (1967-68 and alternate years: spring—as arranged)

**141 Development of Legal Institutions (3)**

Brewer

Introduction to historical jurisprudence: primary attention to origins of Roman Law of Continental Europe and of Anglo-Saxon Common Law. (Fall—day)

**145 Political Parties and Politics (3)**

LeBlanc

Organization and operation of political parties in the United States: party system and structure, role of ideology, voting behavior, campaigns and elections, devices for organizing the government. (Fall—evening; summer 1967)

**146 Political Pressures and Public Reactions (3)**

Public opinion, special interest lobbies, and pressure groups as they operate on government to influence public policy. (Spring—day)

**151-52 Public Administration (3-3)**

Allensworth

Theory and practice of governmental administration and its relation to other public and private organizations and interests; introduction to organization theory and behavior. (Academic year—day; summer 1967—Political Science 151)

**160 Modern Communist Ideologies (3)**

Gyorgy

Intensive study of 20th century communism with emphasis on its antecedents and possible evolution. Backgrounds, careers, and ideas of leading communist figures: Marx, Lenin, Stalin, Khrushchev, and Mao. (Summer 1967—offered only in Communist Affairs program)

**161 Soviet Government and Politics (3)**

Elliott

Analysis of influences in formation of the Soviet system under Lenin, Stalin, and Khrushchev; Soviet Communist Party; government and mass organizations; selected aspects of economic, cultural, social, and foreign policy. (Summer 1967—offered only in Communist Affairs program)

**162 Government and Politics of China (3)**

Hinton

The Chinese Revolution: Chinese tradition, modern Chinese history, Marxism-Leninism and Soviet influence, rise of the Communist Party of China. Principal power structures: party, bureaucracy, armed forces, police. Major domestic and foreign objectives and policies. (Summer 1967—offered only in Communist Affairs program)

**167 U.S. Foreign Policy (3)**

Reich

Constitutional and political factors that determine the formulation, execution, and substance of U.S. foreign policy. (Fall—day; summer 1967)

**171 International Politics (3)**

Nimer

International actors, international and domestic environments of foreign policy, global and regional patterns, general characteristics of foreign policy. (Fall—day and evening; summer 1967)



- 172 **International Organization** (3) Reich  
Development and operation of general and regional international organizations, emphasis on the United Nations. (Spring—day and evening; summer 1967)
- 177 **Latin American Politics and Government** (3)  
Types of government, recent developments, current political conditions in each of the Latin American republics. (Fall—evening; summer 1967)
- 178 **International Politics in the Western Hemisphere** (3)  
Political relations of American republics in the 19th and 20th centuries, development of Pan Americanism and the Organization of American States. (Spring—evening)
- 181-82 **Public International Law and Organization** (3-3) Brewer  
Survey of public law of nations. *First half*: emphasis on law of peace. *Second half*: attention to neutrality and so-called law of war. (Academic year—day and evening; summer 1967—Political Science 181)
- 190 **Politics of Middle and Southern Africa** (3) Nimer  
Political life of states and dependent territories of non-Mediterranean Africa, including upper Nile valley and Horn of Africa. Attention to specifically regional aspect of foreign policies of these countries. (Fall—evening; summer 1967)
- 191 **Governments and Politics of the Middle East** (3) Reich  
Domestic and international politics of eastern Arab states, Turkey, Iran, and Israel. (Fall—evening)
- 192 **Governments and Politics of North Africa** (3) Reich  
Domestic and international politics of Algeria, Tunisia, Morocco, Libya, Egypt, Sudan; their relations with states of the Middle East. (Spring—evening)
- 193 **Governments and Politics of South and Southeast Asia** (3) Purcell, Hinton  
Domestic and international politics of the major states in the area, particular reference to India. (Fall—evening)
- 194 **Governments of China and Japan** (3) Michael  
Institutions and processes of government of contemporary China and Japan, with some historical background. Attention to ideological forces. (Spring—evening)
- 196 **Problems of Modern Political Leadership** (3)  
Lectures and discussions on problems of political leadership in developing states. (Not offered 1967-68)
- 197 **Proseminar: International Affairs** (3) Nimer, Purcell, Gordon  
Diplomatic, economic, psychological, military problems of U.S. foreign policy. Readings, term papers, discussion. Primarily for seniors in International Affairs curriculum; open to limited number of other qualified students. (Fall—day; spring—evening)



**198 Contemporary Trends in Political Science (3)**

Lectures and discussions emphasizing recent developments of research and theory applicable to developing states. (Not offered 1967-68)

**199 American Government and Politics (3)**

LeBlanc

Proseminar: reading and research as a basis for analyzing significant problems. Open to seniors in Public Affairs and Political Science curricula. (Spring—day)

**THIRD GROUP****201-2 Quantitative Approaches to Political Analysis (3-3)**

Chacko

*First half:* methodology in the context of current issues. *Second half:* selected problems of the political process. (Academic year—evening)

**203-4 State and Local Governments (3-3)**

Allensworth

*First half:* readings and group discussions on the process of politics at state and local levels. *Second half:* advanced research in selected topics of state and local politics. (Academic year—evening)

**209-10 Seminar: Federal Government of the United States (3-3)**

Research on legislative problems of Congress; relations of Congress with Administration; constitutional and political powers of President, Cabinet, and Executive Office of the President; practical politics of presidency; presidential policy leadership and control. (Academic year—evening)

**211 Readings in Comparative Government and Politics (3)**

Kraus or Stout

Methodological questions; comparative political processes and systems; some attention to legislatures, executives, parties, public services, the role of the military. (Fall—day)

**212 Seminar: Comparative Government and Politics (3)**

Stout

Selected topics in comparative political institutions and politics. Each semester is devoted to a selected country or significant institutional or policy problem. Attention is directed to questions of method. (Spring—day)

**\*215-16 Seminar: Sino-Soviet Blocs in World Affairs I-II (3-3)**

London

*First half:* significant issues of communism, particularly in the Soviet Union and Red China; concept and structure of "world socialist system"; intra-Bloc relations with emphasis on Sino-Soviet dispute. Prerequisite: 3 semester hours in modern political theory. *Second half:* political ramifications of communist movement and its relations with the noncommunist world. Prerequisite: 3 semester hours in international relations or comparative government. (Academic year—evening)

**217 Reading Course in Political Theory (3)**

Kraus

(Formerly Political Science 218)

Readings and group discussions, principally on modern political and constitutional theory since the 17th and 18th centuries. (Fall—evening)

\* Primarily for students in the Institute for Sino-Soviet Studies.



**218 Seminar: Topics in Political Theory (3)**

Kraus

*(Formerly Political Science 217)*

Research and discussion on problems of modern political and constitutional theory, theoretical aspects of representative government, democracy, socialism, totalitarianism. Topic to be announced in *Schedule of Classes*. (Spring—evening)

**221-22 The United States Constitution and the Judicial Function (3-3)**

Morgan

*First half:* readings and group discussions on constitutional law and politics. *Second half:* seminar on selected topics of constitutional law and judicial behavior. (Academic year—evening)

**224 Readings in Socialism and Communism (3)**

Kraus

Readings of primary and secondary works ranging from pre-Marxian and Marxian socialism to contemporary Marxism-Leninism. Prerequisite: 3 semester hours in modern political theory. (Fall—evening)

**225 Seminar: Marxism-Leninism (3)**

Kraus

Crucial theoretical problems, such as nature of revolution, dictatorship of proletariat, transition to communism, imperialism, and national liberation in Marxian and contemporary communist doctrine. Prerequisite: Political Science 224 or permission of instructor. (Spring—evening)

**\*227 Seminar: Government and Politics of Eastern Europe (4)**

Gyorgy

Comparative study of principal political, social, economic institutions; Soviet stake; patterns of Soviet domination; efforts toward economic and political integration; impact of Sino-Soviet dispute; U.S. policy toward satellite nations. Workshop: Eastern Europe in world affairs. (Spring—evening)

**\*229 Policies Toward Arts and Humanities in Communist Society (3)**

Petrov

Changing role of arts and literature in Soviet Union. Unionization of arts and struggle of cultural elite for freedom of expression. Forms and instruments of Party control. Party policies in cultural field. Prerequisite: Slavic and Oriental Languages and Literatures 162, 165, or equivalent. (Spring—evening)

**\*230 Seminar: International Communism (3)**

Metzl

*Fall semester:* emphasis on operational techniques. *Spring semester:* case studies. Students may receive credit for the fall semester and also the spring semester, but neither semester may be repeated for credit. (Fall and spring—evening)

**\*231 Seminar: Sino-Soviet Relations (3)**

Michael

Background, development, and status of conflict within the communist movement; emphasis on role of Chinese communists. Prerequisite: 3 semester hours selected from History 187; Political Science 101, 194; or equivalent. (Spring—day)

**\*232 Seminar: International Communications (3)**

White, Dasbach

East-West perspectives. History and theory, image factors, national patterns, communication in communist orbit and between it and free World. (Fall—day)

\* Primarily for students in the Institute for Sino-Soviet Studies.



**\*233 Seminar: Soviet Government and Politics (3)**

Elliott

Theoretical and historical bases of Soviet political system; socioeconomic setting of its formation; nature and role of the Party, government, and mass organizations; selected problems of domestic and foreign policy. Prerequisite: 3 semester hours selected from History 145-46, Political Science 112, or equivalent. (Fall—day)

**\*234 Soviet Political Process (3)**

Ploss

(Replaces former Political Science 234 Seminar: Soviet Internal Policy)

Influence of revolutionary ideas, traditions, and accidental events on Soviet organization, and administration of Soviet social, economic, nationality, and military policies; application of these policies by leaders to maintain power. (Spring—day)

**235 Metropolitan Government and Politics (3)**

Allensworth

Urban political processes and change, emphasis on land use and planning; social, economic, political aspects of metropolitan differentiation and integration. (Fall—evening)

**†237 Chinese Law (3)**

Hsia

Survey of history of Chinese law and its social background; Western impact toward end of Manchu Dynasty; legal concepts and institutions of the Chinese Republic from 1912 until the communist take-over in 1949. Philosophy and development of communist legal system from Kiangsi-Yenan period to present. (Spring—as arranged)

**‡238 Soviet Law (3)**

Ramundo

Concept of "socialist legality"; legal relationship of individual to state and other participants in Soviet society; role of Party in Soviet legal system; Soviet philosophy of law; state (constitutional) law; Soviet federalism, governmental apparatus, rights and obligations of citizenship; criminal law; property law; labor law; selected topics in civil law and procedure; international law. (Fall—as arranged)

**245-46 The American Political Process (3-3)**

LeBlanc

*First half:* readings and group discussions on nature and functions of political parties and role and techniques of political interest groups. *Second half:* seminar on selected topics of American politics. (Academic year—evening)

**\*253 Seminar: Chinese Government and Politics (3)**

Michael

Political institutions and concepts in late imperial times, during the revolution, under national government, and under communism. Emphasis on the communist period. Prerequisite: 3 semester hours selected from History 187; Political Science 101, 194; or equivalent. (Spring—evening)

**\*254 Colloquium: Modern China (3)**

Michael

Interuniversity research colloquium of faculty members of the Institute for Sino-Soviet Studies and other area universities from different disci-

\* Primarily for students in the Institute for Sino-Soviet Studies.

† Same as Law 474 (2). Graduate students registering for Political Science 237 make special arrangements with the instructor for supplementary assignments equivalent to one additional semester hour.

‡ Same as Law 473 (2). Graduate students registering for Political Science 238 make special arrangements with the instructor for supplementary assignments equivalent to one additional semester hour.



plines concerned with the study of modern China. Critical discussions of research plans and studies in progress in weekly sessions. Advanced graduate students admitted with permission of faculty group. (Fall and spring—day)

**\*255 Colloquium: Russia and Eastern Europe (3)**

London, Gyorgy

Interuniversity research colloquium of faculty members of the Institute for Sino-Soviet Studies and other area universities from different disciplines concerned with the study of Russia and Eastern Europe. Critical discussions of research plans and studies in progress in weekly sessions. Advanced graduate students admitted with permission of faculty group. (Fall and spring—day)

**\*257 Seminar: Communism in Developing Countries (3)**

Thornton

Examination of international communist policy for, and communist parties in, developing countries. Case studies of Asia, Africa, and Latin America. Basic communist concepts of imperialism and nationalism; development and current application of Soviet and Chinese variants of strategy and tactics for "national liberation." (Spring—evening)

**\*258 Seminar: Communist Parties in Noncommunist World (3)**

Gyorgy

Movements and ideological variations of communist parties of France, Italy, the Scandinavian countries, and other Central and West European nations. Case studies on communist problems of Middle East and North African nations. (Fall—day)

**\*265 Chinese Communist Policy Process (3)**

Hinton

Determinants of policy, view of the world, instrumentalities of power, shifting locus of power, interrelationship of domestic and foreign policy, crucial decisions and their implementation, formulation of policy, outlook. (Fall—evening)

**267 Seminar: U.S. Foreign Policy (3)**

Purcell

Research and selected reading as the basis for an analysis of the foreign policy of the United States, with particular reference to the decision-making process and the execution of policy. (Fall—evening)

**268 Seminar: Comparative Foreign Policies (3)**

Stout

Research and selected reading as the basis for an analysis of the foreign policies of major powers, with particular reference to the decision-making process and the execution of policy. (Spring—evening)

**\*269 Seminar: Soviet Foreign Policy (3)**

Elliott

External policies and relations of the USSR; world objectives of Soviet leaders; relations with other communist states, Western powers, and other countries; international propaganda, disarmament policy, foreign economic relations. Prerequisite: 3 semester hours selected from History 137, 145-46, or equivalent. (Spring—evening)

**\*270 Political and Social Institutions of Eastern Europe (3)**

Maday

(Formerly Seminar: Soviet Foreign Policy Process)

Major political and social factors which have shaped the inter-war, World War II, and post-war evolution of Eastern Europe. Emphasis on sociological and anthropological forces which have contributed to "Balkaniza-

\* Primarily for students in the Institute for Sino-Soviet Studies.



tion" of this area in the last fifty years. Each time the course is offered the concentration will be on one or two selected countries. (Fall—evening)

**271-72 Problems in International Organization (3-3)**

Reading and research as a basis for analyzing developments in general and regional international organizations. (Academic year—evening)

**273 Public Opinion and Foreign Policy (3)**

Development, organization, and operation of international information programs by major world powers. U.S. public opinion influencing foreign policy formation and conduct. (Fall—evening)

**275-76 Problems of International Politics (3-3)**

Nimer

*First half:* readings and discussions of recent and older works of theoretical significance. *Second half:* individual research and class discussion of selected international political processes. Attention to factual and value problems. (Academic year—evening)

**277 Seminar: Latin American Government (3)**

Analysis of the political structures of selected Latin American republics. Two comparable governments studied each year. (Fall—evening)

**278 Seminar: Latin American Political Philosophy (3)**

Research in political personalities and philosophies of 19th and 20th century Latin America. (Spring—evening)

**281-82 Seminar: Public International Law (3-3)**

Brewer

Research in the public law of nations, with special attention to problems of pacific settlement, sanctions, war, neutrality, and state jurisdiction, and to their political implications. (Academic year—day)

**\*283 Topics in International Law (3)**

**\*285 Diplomacy since World War II (3)**

**287 American Military Power (3)**

For students in the Air Force Advanced Management Program. (Fall—as arranged)

**†288 Seminar: Soviet Military Policy and Strategy (3)**

Gallagher

Soviet developments in military policy and strategy with attention to intra-Bloc military cooperation, political context of Soviet military policy, significant changes in recent Soviet military thought. (Fall—evening)

**290 Reading Course in African International Politics (3)**

Nimer

Readings and discussions on selected topics in the international politics of Africa: intra-African regional relations, political unions, the African states and the extra-continental world. (Spring—evening)

**291 Governments and Politics of the Middle East (3)**

Reich

Reading and research in selected problems in the government and politics and international relations of the Middle East. (Fall—evening)

\* Offered in War College programs only.

† Primarily for students in the Institute for Sino-Soviet Studies.



- 292 **Governments and Politics of North Africa** (3) Reich  
Reading and research in selected problems in the government and politics and international relations of North Africa. (Spring—evening)
- 293 **Seminar: Governments and Politics of South and Southeast Asia** (3) Purcell  
Research and selected reading as basis for analysis of structure, problems, and policies of the governments of selected countries in the area with particular reference to India. (Spring—evening)
- \*294 **Seminar: Governments and Politics of Japan and Korea** (3) Hinton  
Readings, research, and discussion on the contemporary political problems and relevant historical background of Japan, North and South Korea. (1968-69 and alternate years)
- \*295 **Seminar: Chinese Communist Foreign Policy** (3) Hinton  
Objectives; formulation and implementation of foreign policy; Communist China as Asian state, revolutionary influence, would-be power. Relevant background, such as Political Science 253, desirable. (Spring—day)
- \*296 **Seminar: the Communist Bloc in Far Eastern International Politics** (3) Hinton  
Evolution of communist strategy for Asia, armed struggle in South and Southeast Asia, wooing of national bourgeoisie, development of Asian communist states, local communist parties since World War II, Sino-Soviet rivalry. (Fall—evening)
- \*298 **Southeast Asia in World Politics** (3) Gordon  
(Replaces former Political Science 298 *Sino-Soviet Relations in Southeast Asia*)  
Southeast Asia in great-power perspective. Overlapping and conflicting interests, foreign policies, and military requirements of the United States, Japan, China, and the USSR. Balance-of-power concept and development of Asian subsystem. (Spring—evening)
- 299-300 **Thesis Research** (3-3) Staff  
(Academic year—as arranged; summer 1967)

#### FOURTH GROUP

- 398 **Advanced Reading and Research** (arr.) Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)
- 399 **Dissertation Research** (arr.) Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

\* Primarily for students in the Institute for Sino-Soviet Studies.



## Psychology\*

*Professors* Thelma Hunt, J.L. Finan (*Chairman*), E.L. Phillips, J.N. Mosél, B.I. Levy, W.E. Caldwell, R.D. Walk, R.K. White  
*Professorial Lecturers* Margaret Ives, S.J. Kaplan  
*Associate Professors* C.E. Tuthill, Eva Johnson, Virginia Kirkbride, L.E. Schlesinger (*Research*)  
*Associate Professorial Lecturers* R.K. Kahn, E.A. Cogan, Milton Shore, J.B. Margolin  
*Assistant Professors* R.R. Bonato (*Research*), R.H. Tanck (*Research*), Lois Hammer, D.E. Silber, Charles Rice  
*Instructor* William Rucker  
*Lecturer* S.L. Cohen

### CLINICAL TRAINING STAFF

*Clinical Professor* I.W. Scherer  
*Associate Clinical Professors* Katharine Beardsley, Elizabeth Broomhead, M.L. Meltzer  
*Assistant Clinical Professors* Alice Adams, Andrea Doman, Boleslaus Kurpiewski, A.M. Rochlin, J.M. Smothers

*Bachelor of Arts with a major in Psychology (Departmental).*—Prerequisite: the Arts and Letters curriculum, page 63, and Psychology 1 and 5, 1 and 6, or 5–6.

The general requirements for the degree are stated on pages 69–73. The sixty required semester hours, in addition to those taken as prerequisites, must include twenty-four hours in second-group Psychology courses, including Psychology 196 and one course from each of the following groups—Group A: Psychology 118, 121, 161; Group B: Psychology 115, 151, 156; Group C: Psychology 112, 129, 131, 144. Statistics 53 or 104, or an appropriate course in mathematics, is required.

*Master of Arts in the field of Psychology.*—Prerequisite: the degree of Bachelor of Arts with a major in Psychology at this University, or equivalent.

Required: the general requirements, pages 77–79. Of the twenty-four required semester hours (exclusive of the thesis), a minimum of eighteen must be in third-group Psychology courses including Psychology 202 and either 203 or 204; six may be in related fields approved by the Department.

Master's programs are available in the following fields of concentration: (1) tests and measurements, (2) clinical, (3) social, (4) personnel, (5) experimental, (6) personality, and (7) experimental comparative. For detailed requirements consult the Chairman of the Department.

*Master of Arts in the field of Linguistics.*—See pages 267–69 and the departments of Germanic Languages and Literatures, Romance Languages and Literatures, and Slavic and Oriental Languages and Literatures.

*Doctor of Philosophy fields of study in Psychology:* Psychology (Clinical, Comparative, Developmental, Experimental, Social), Psychometrics, Psychotechnology, and Visual Research.—See pages 77–78, 79–80 for requirements for the degree.

*Master of Arts in Government in the field of Personnel Administration.*—See pages 121–24, 130.

*Master of Business Administration in the field of Personnel Administration.*—See pages 121–24, 128.

*Master of Public Administration in the field of Personnel Administration.*—See pages 121–24, 129.

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



*Master of Arts in Education in the fields of Employee Training, Guidance, and Student Personnel Work in Higher Education.*—Prerequisite: a Bachelor's degree from an accredited institution and two years of successful teaching experience. See pages 100–103.

#### FIRST GROUP\*

##### †1 General Psychology (3)

Lecture (2 hours), discussion (1 hour). Fundamental principles underlying human behavior. (Fall and spring—day and evening; summer 1967)

Staff

##### †5–6 Principles and Methods of Psychology (3–3)

Lecture (2 hours), laboratory (2 hours). An experimental approach to understanding behavior; individual and class experiments performed. *First half:* awareness, discrimination, sensation, perception, and emotions and their relation to adaptive behavior. *Second half:* topics of motivation, learning, memory, and problem solving. (First half: fall—day and evening. Second half: spring—day.)

Walk, Hammer

##### 8 Psychology of Motivation and Personality (3)

Introduction to psychology of personality. Principles of motivation, personality development, social and cultural factors, and assessment and description of personality emphasized. (Fall and spring—day and evening; summer 1967)

Tuthill, Silber, Rice

##### 22 Introduction to Educational Psychology (3)

Consideration of individual and group differences, adjustments, psychology of learning in relation to education and training. (Fall—evening; spring—day; summer 1967)

Tanck

##### 29 Psychology of Childhood (3)

Genetic approach to study of the child. Emphasis on the socialization process, learning, and the child's view of the world. (Fall—day; spring—evening; summer 1967)

Johnson

#### SECOND GROUP‡

##### 101 Abnormal Psychology (3)

Causes, diagnosis, treatment, and prevention of various types of maladjustments and mental disorders. Prerequisite: 6 semester hours in psychology, or 3 in psychology and 6 in a biological science. (Fall—day and evening; spring—day; summer 1967)

Hunt and Staff

##### 112 Psychology of Adolescence (3)

Psychological characteristics and problems peculiar to adolescence, with emphasis on applications of psychology to solution of such problems. (Fall—day)

Johnson

##### 115 Psychology of Language and Communication (3)

Introduction to psycholinguistics and verbal behavior. Information theory.

Mosel

\* Students electing Psychology courses in the freshman year must begin with Psychology 1.

† Psychology 1 or 5–6 is prerequisite to all other courses in Psychology.

‡ Six semester hours in first-group courses are prerequisite to all second-group courses.



measurement of meaning, cultural and linguistic structures in the perception and learning of language. (Fall—day)

- 118 **Physiological Psychology** (3) Finan  
Basic structure and functions of sensory systems, motor systems, central nervous system, autonomic nervous system, and endocrine system, with emphasis on the relations between physiological functioning and behavior. (Fall—evening; spring—day; summer 1967)
- 121 **Psychology of Learning** (3) Finan  
Current learning theories and issues. (Fall—day)
- 129 **Motivational Factors in Personality** (3) Kirkbride  
Survey of basic principles and assessment techniques, with emphasis on applications to counseling. (Fall—day)
- 131 **Psychological Tests** (3) Hunt  
Survey of psychological tests and their more common uses in business, industry, government, law, medicine, and education. Material fee, \$7. (Fall—day; spring—evening; summer 1967)
- 144 **Personnel and Industrial Psychology** (3) Mosé  
Psychological concepts and methods applied to problems of personnel management, human engineering, employee motivation, and productivity. (Fall and spring—evening; summer 1967)
- 145 **Psychology of Management** (3) Cohen  
Primarily for students in the School of Engineering and Applied Science. Introduction to principles of industrial organizations and personnel selection. (Fall and spring—evening; summer 1967)
- 151 **Social Psychology** (3) Tuthill, White  
Social foundations of attitudes and behavior: cognition, motivation, role-behavior, communication, small-group processes, racial attitudes, nationalism, and war. (Fall—evening; spring—day; summer 1967)
- 156 **Psychology of Attitudes and Public Opinion** (3) Tuthill  
Psychology of opinion formation, measurement of opinion, social determinants of attitudes, psychological processes in propaganda, bases of receptivity of propaganda, psychological warfare. (Spring—evening; summer 1967)
- 161 **Comparative Psychology** (3) Caldwell  
Lectures and demonstrations on animal psychology. Psychological processes in infrahuman organisms, evolution of behavior, the place of animal experimentation, and research in psychology. (Spring—day)
- 191 **Independent Research in Psychology** (3) Staff  
Opportunity for work on individual library or experimental projects. Open to qualified students by permission; arrangements must be made with the sponsoring faculty member prior to registration. May be repeated once for credit. (Fall and spring—as arranged; summer 1967)
- 196 **History and Systems of Psychology** (3) Caldwell and Staff  
Senior capstone course which includes a survey and integration of the major viewpoints and concepts of psychology. Required of psychology majors. (Fall—day; spring—evening; summer 1967)



**198 Current Research Issues in Psychology (3)**

Caldwell, Walk

Conducted as a seminar. Recent experiments in psychology, including those performed by members of the class; emphasis on student participation. Limited to senior psychology majors. (Spring—day)

**THIRD GROUP\*****202 Psychological Research Methods and Procedures (3)**

Walk

Required in all graduate programs. Prerequisite: a laboratory course in experimental psychology and an elementary course in statistics. (Fall—evening; spring—day)

**203-4 Experimental Foundations of Psychology (3-3)**

Hammer

Required of all Ph.D. candidates during first year of graduate study. *First half*: problems in physiologic processes, psychophysics, sensation, and perception. *Second half*: motivation, learning, cognitive processes. (First half: fall—evening. Second half: spring—day.)

**205 Methodological and Theoretical Principles in Psychology (3)**

Finan

Review and appraisal of basic postulates of psychology as a science. Topics include role of theory in psychological science, data-language of psychology, experimental vs. empirical methods of observation, molecular vs. molar approaches, qualitative vs. quantitative approaches, and problem of inference in behavioral sciences. (Spring—day)

**209 Seminar: Psychology of Motivation (3)**

Caldwell

Various theoretical approaches to the psychology of motivation; systematic concepts and experimental findings deriving from each approach. (1968-69 and alternate years; summer 1967)

**211 Assessment of Cognitive Functioning (3)**

Levy

Concept of intelligence and its assessment through the use of a battery of tests and clinical procedures. Prerequisite: elementary course in tests and measurements. Material fee, \$7. (Fall and spring—day)

**212 Personality Assessment by Projective Techniques (3)**

Silber, Levy

Emphasis on administration and scoring of the Rorschach Test. Prerequisite: Psychology 211. (Fall—day; spring—evening; summer 1967)

**215 Personality Assessment by Multiple Procedures (3)**

Levy, Silber

Consideration and use of a wide range of procedures in assessment of personality. Prerequisite: Psychology 211 and 212. (Fall—evening; spring—day)

**217 Seminar: Developmental Psychology (3)**

Emphasis on perceptual and cognitive development. Covers major theoretical approaches and illustrates these by reference to current research problems. (Spring—day)

**218 Seminar: Systems of Psychotherapy (3)**

Silber

Introduction to theory and technique of psychotherapeutic approaches: psychoanalytic, ego-centered, nondirective, transactional, and others. Original sources surveyed. (Spring—day)

\* Open only to graduate students, except by special permission of Instructor and Chairman of the Department.



- \*219 **Seminar: Topics in Advanced Clinical Psychology** (3) Margolin, Ives  
Selected areas of research and theory in the general field of clinical psychology. Community psychology and professional problems alternate. (Fall and spring—evening; summer 1967)
- 220 **Seminar: Abnormal Psychology** (3) Hunt  
Study of selected problems in the field of abnormal psychology. (Fall—day; spring—evening; summer 1967)
- 223 **Seminar: Learning** (3) Staff  
Selected topics in the psychology of learning. (Spring—evening)
- 226 **Seminar: Clinical Psychology of Childhood and Adolescence** (3) Johnson  
Survey of behavior and personality disorders. (Spring—evening)
- 227-28 **Seminar: Variations in Psychotherapeutic Approach** (3-3) Kahn  
Patient needs and demands on the therapist. Case participation heavily relied upon. Open to qualified students in psychology and related fields, with permission of instructor. (Academic year—day)
- 229 **Seminar: Principles of Behavior Change** (3) Phillips  
Stimulus-organism-response variables and their interactions, with emphasis on learning theory as applied to clinical problems. (Spring—day)
- 231 **Development of Psychometric Instruments** (3) Mosél  
Quantitative techniques and principles used in construction, standardization, and evaluation of personality and ability measures for research and practice; quantification of human judgment for measurement purposes. Prerequisite: course in tests and measurements and an elementary course in statistics. (Fall—evening)
- 234 **Seminar: Theory of Psychological Measurement** (3) Mosél  
Development of classical axiomatic-deductive theory underlying major notions in the construction and evaluation of psychological tests. (1968-69 and alternate years)
- 245 **Seminar: Organizational Behavior** (3) Mosél  
Analysis of organizational behavior; emphasis on motivation and productivity. Recent research on employee attitudes, primary group, effects of various patterns of supervisory leadership, role of formal and informal organization, job design. (Spring—evening)
- 246 **Seminar: Personnel Measurement Techniques** (3) Mosél  
Detailed consideration of techniques of personnel selection and performance evaluation. Employment tests, personal data, assessment interviews, and performance ratings. (Not offered 1967-68)
- \*247 **Seminar: Topics in Psychotechnology** (3)  
Research and theory in the general field of human performance in work organizations. Open to qualified students in psychology, engineering, and the social sciences with permission of instructor. (1967-68 and alternate years: spring—evening)

\* Independent topics each semester; may be repeated for credit.



- 249 **Seminar: Psychological Factors in Man-Machine Systems** (3) Finan  
Psychotechnology vs. theoretical psychology in the analysis, design, and operation of complex man-machine systems. Open to qualified students in psychology and engineering, with permission of instructor. (Fall—evening)
- 251 **Seminar: Advanced Social Psychology** (3) Tuthill  
Current research and theory in social psychology; group dynamics, ego-involvements, action research, and social interaction theory. (Fall—evening)
- 252 **Research Methods in Social Psychology** (3) White, Tuthill  
1967-68 and alternate years: opinion-survey techniques; interviewing, content-analysis, etc. 1968-69 and alternate years: attitude-scale construction, sampling, etc. May be repeated once for credit. (Spring—evening)
- 254 **Seminar: Experimental Social Psychology** (3) Tuthill  
Experimental study of small groups, autocratic and democratic group climates, interaction process analysis, Lewin's field-theoretical approach to individual and group processes. (1967-68 and alternate years: spring—evening)
- 256 **Seminar: Psychology of Group Conflict** (3) White  
An attempt to integrate evidence from animal behavior, child behavior, anthropology, psychiatry, and recent history, including World Wars I and II and the present East-West conflict. (Spring—evening)
- \*259 **Seminar: Social Psychology of Communism** (3) White  
Public and governmental opinion in communist countries, authoritarian thinking, communist propaganda, problems of Western communication with communist countries. (Fall—day)
- †261 **Seminar: International Communication** (3) Mosel  
Communicating information and effecting attitude change across cultures by mass media. Emphasis on psychocultural factors and the functions of mass communication in the development of transitional societies. (1968-69 and alternate years)
- ‡269 **Seminar: Topics in Social Psychology** (3) (Spring—evening)  
Selected areas of research and theory in social psychology. (Spring—evening)
- 272 **Seminar: Theories of Personality** (3) Caldwell  
Emphasis on theoretical problems and methodology in the field of personality study. (Fall—evening)
- 283-84 **Practicum in Clinical Psychology** (3-3) Silber  
Supervised practical instruction in agencies doing clinical psychological work. Prerequisite: Psychology 212. Admission by permission of instructor. (Academic year—as arranged; summer 1967)

\* Primarily for students in the Institute for Sino-Soviet Studies.

† Primarily for students in the School of Government and Business Administration and the School of Public and International Affairs.

‡ Independent topics each semester; may be repeated for credit.



- 285-86 **Teaching Practicum in Psychology** (1-1) Staff  
Supervised training in aspects of college teaching, including tutorial and small group instruction, lecturing, and examination methods; readings; seminar discussions. Admission by permission of instructor. May be repeated with progression from elementary to advanced courses. (Academic year—as arranged)
- \*289 **Seminar: Current Topics in Experimental Psychology** (3) Staff  
Review and discussion of contemporary research and theory in a specialized field of psychological study, by leaders in the field. (Fall and spring—evening; summer 1967)
- 292 **Seminar: Perception** (3) Walk  
Study of current research and theory in the experimental psychology of perception. (1968-69 and alternate years)
- 293 **Seminar: Psychology of Thinking** (3) Rice  
Thinking and problem solving. Specific topics include: concept formation, nature of insight, and other cognitive processes. (Spring—evening)
- 295 **Independent Research in Psychology** (arr.) Staff  
Individual library or experimental research under supervision of staff member. Arrangements must be made with sponsoring faculty member prior to registration. May be repeated once for credit. (Fall and spring—as arranged; summer 1967)
- 299-300 **Thesis Research** (3-3) Staff  
(Academic year—as arranged; summer 1967)

#### FOURTH GROUP

- 398 **Advanced Reading and Research** (arr.) Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)
- 399 **Dissertation Research** (arr.) Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

#### Public Administration†

Professors D.S. Brown, Waldo Sommers, K.E. Stromsem (*Chairman*), S.M. Rosen (*Visiting*), Julian Kulski, Edwin Timbers  
Professorial Lecturers W.G. Torpey, C.E. Goode, Ben Posner  
Associate Professor D.R. Cloutier  
Associate Professorial Lecturers Ross Pollock, Norman Beckman, R.R. Temple  
Assistant Professorial Lecturers W.E. McConville, D.G. Phillips  
Master of Arts in Government in the fields of Personnel Administration, Public Administration, or Urban and Regional Planning.—See pages 121-24, 130-31.

\* Independent topics each semester; may be repeated for credit.

† Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.



*Master of Public Administration in the fields of Personnel Administration, Public Administration, or Urban and Regional Planning.*—See pages 121–24, 128–29.  
*Doctor of Public Administration.*—See pages 131–33.

## PUBLIC ADMINISTRATION

### THIRD GROUP

#### \*213 Administration in Government (3)

Brown, Cloutier

Critical analysis of federal administrative organizations as an integral part of the political system. Roles of Congress, the Presidency, the Courts, interest groups, political parties, and the public in the administrative process; special attention to centripetal and centrifugal forces. (Fall and spring—day and evening; summer 1967)

#### 215 Comparative Administrative Systems (3)

Rosen

Examination and analysis of the administrative systems of selected foreign governments; attention to practices applicable to administration in the United States. (Fall—evening)

#### 216 Administration of International and Supranational Activities (3)

Staff

Analysis of the evolution and application of the administrative process in selected international and supranational activities. Problems of organization and management in multi-national supported and staffed activities. (Spring—as arranged)

#### 217 Seminar: Developmental Administration (3)

Brown

Examination of theories of transfer of administrative capabilities from one country to another, factors relating to indigenous cultures, strategies of aid, examination of specific national and supranational programs. (Fall—evening)

#### \*221 Management in the Executive Branch (3)

Rosen

Analysis of application of management theory and practice in the Executive Branch of the Federal Government; emphasis on staff responsibilities and relationships and internal organization and control. (Fall and spring—evening; summer 1967)

#### 223 Behavioral Factors in Large Organizations (3)

Brown

Analysis of the nature and characteristics of bureaucracy; dysfunctionism; approaches to policy guidance and leadership, particularly in large public organizations; influence and control systems. (Fall and spring—evening)

#### 225–26 Internship in the Administrative Processes (3–3)

Sommers

Open only to persons selected by government agencies for participation in approved intern programs. (Academic year—as arranged)

#### 231 Public Personnel Administration (3)

Sommers

Survey of basic principles and functions of personnel administration in the public service; roles of personnel management; recruitment; placement; wage and salary administration; training; retirement, and other personnel functions. (Fall—evening)

\* Special section of this course offered in the Air Force Advanced Management Program.



232 **Problems in Public Personnel Management (3)** Sommers, Torpey  
(Formerly *Federal Personnel Procedures*)

Analysis and evaluation of major personnel management problems in government; employee-management relations; interagency and intergovernmental relationships. Impact of automation. Evaluation of personnel systems. (Spring—evening)

233 **Seminar: Manpower Development and Utilization (3)** Timbers  
Analysis of manpower resources. Research projects and case studies in ways and means of increasing employee potential; use of training programs, executive development, incentive systems. (Fall—evening)

\*243 **Local Government Law (3)** Pock  
Decision-making processes in metropolitan and local communities; types and objectives of city, county, and special function local government units; intergovernmental units; intergovernmental relations; original organization and changes; local lawmaking; community planning and development. (Fall—day and evening)

246 **Urban Dynamics (3)** Beckman  
Forces that lie behind economic decisions which in turn determine the development of cities. (Fall—evening)

248 **Financing Municipal Services (3)** Cloutier  
Analysis of the structure and administration of public finance of local governments. (Spring—evening)

249 **Administration in Metropolitan Area Governments I (3)** Cloutier  
Examination of public administration at the local level. Developments and trends growing out of the changing urban pattern. (Fall—evening)

250 **Administration in Metropolitan Area Governments II (3)** Cloutier  
Examination of newly emerging political and social groups in Metropolitan areas and their relations to governmental administration. Examination of federal programs in metropolitan areas. Prerequisite: Public Administration 249 or permission of instructor. (Spring—evening)

†251 **Governmental Budgeting (3)** Stromsem, Posner  
Survey of the basic concepts, principles, and practices in governmental budgeting; interrelationship of planning, programming, and budgeting; their role in the management process. (Fall and spring—evening; summer 1967)

252 **Problems in Planning, Programming, and Budgeting (3)** Stromsem, McConville  
Intensive analysis of developments in Federal planning, programming, and budgeting, application of new tools in the decision-making process, evaluation of the systems. (Fall and spring—evening)

\* Same as Law 349 (2). Students electing Public Administration 243 make special arrangements with instructor for supplementary assignments equivalent to one additional semester hour. Dr. Pock is Associate Professor of Law in the National Law Center.  
† Special sections of this course offered in the Air Force Advanced Management Program and the Navy Graduate Financial Management Program.



- 254 **Seminar: Financial Management in the Federal Service** (3) Stromsem  
Functions and interrelationships of central federal financial management agencies, their policy, economic and managerial roles, controllership functions, and standards and practices in financial management. (Spring—evening)
- \*260 **Seminar: Policy Formulation and Administration** (3) Brown, Rosen  
Analysis in depth of factors and processes involved in policy development, with particular attention to selected areas of national policy; development of agency goals and objectives. (Fall—evening)
- 261 **The Public and the Administrator** (3) Phillips  
Nature of the public interest, ways of determining public opinion, public opinion and the decision-making process, theories and methods of working with the public, interest groups, public relations and information programs. (Fall—evening)
- 262 **Seminar: Science, Technology, and Public Policy** (3) Rosen  
The impact of science and technology upon public administration in terms of both administrative practice and national policies. (Spring—evening)
- 271 **Readings and Research in Public Administration** (3) Timbers  
Advanced directed readings and research in specific areas of public administration. (Fall and spring—as arranged; summer 1967)
- 273 **Colloquium in Public Administration and American Political and Social Institutions** (3) Cloutier  
Supervised study in depth of contemporary literature in selected fields, and of research methodology in public administration. Primarily for doctoral candidates. (Fall—as arranged)
- 298 **Case Studies in Public Administration** (3) Rosen  
Analysis and discussion of problems in public management by use of the case method. (Spring—evening)
- 299 **Thesis Seminar** (3) Sommers  
Examination of thesis standards, research philosophy, and methodology. (Fall and spring—evening; summer 1967)
- 300 **Thesis Research** (3) Staff  
(Fall and spring—as arranged; summer 1967)

#### FOURTH GROUP

- 398 **Advanced Reading and Research** (arr.) Staff  
Limited to students preparing for the Doctor of Public Administration general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)
- 399 **Dissertation Research** (arr.) Staff  
Limited to Doctor of Public Administration candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

\* Special section of this course offered in the Air Force Advanced Management Program.



## URBAN AND REGIONAL PLANNING

## THIRD GROUP

## 201 Introductory Planning Problems (3)

Kulski

Planning design laboratory; introductory exercises employing the analytic and substantive knowledge imparted in related courses. Examination of the anatomy of neighborhoods and communities, analysis of findings, formulation of proposals. (Fall and spring—evening)

## \*203 Fundamentals of Urban Design (3)

Staff

Principles of urban design and arrangement, traffic flow, use of space to achieve urban efficiency with maximum visual amenity. (Fall—evening)

## 205 Seminar: Urban Housing (3)

Kulski

Consideration of housing problems growing out of increasing urban population. Social, economic, and design aspects of today's housing; foreign and domestic housing programs and policies. (Fall—evening)

## \*215 Advanced Planning Problems (6)

Staff

Anatomy of the region, analysis of findings, formulation of proposals, presentation of material to faculty and cooperating groups. (Fall evening)

## 217 Urban Design Laboratory (3)

Kulski

Intensive research into the nature of physical forms in urban environment; cultural factors and human values which shape them. Tools and methods for creating man's total environment; hierarchy of values in the design process. (Spring—evening)

## 299 Thesis Seminar (3)

Staff

Examination of thesis standards, research philosophy, and methodology. (Fall and spring—as arranged)

## 300 Thesis Research (3)

Staff

(Fall and spring—as arranged)

## Public and International Affairs†

Professors A.E. Burns, J.W. Brewer, H.M. Merriman, R.H. Davison, W.H. Kraus, R.B. Thompson, J.W. Kendrick, H.L. LeBlanc, C.E. Galbreath, Kurt London, J.L.B. Atkinson, H.M. Stout, J.N. Mosél, W.C. Hopkins, F.H. Michael, R.E. Purcell, Joseph Aschheim, R.K. White, Benjamin Nimer, Tso-Liang Hsiao (*Visiting Research*), Helen Yakobson, R.P. Sharkey, Bernard Gordon (*Visiting Research*), Andrew Gyorgy, Mario Rodriguez

\* Offered by Virginia Polytechnic Institute on The George Washington University campus. Open to qualified GWU students.

† Staff of Instruction for the academic year 1966-67; Chairman for 1967-68. Programs in Public and International Affairs are administered by the School of Public and International Affairs, H.M. Stout, Acting Dean.



*Professorial Lecturers* R.L. Garthoff, Lothar Metzl, Herbert Block, Bela Maday, Joseph Baclawski, John Hardt, Arturo Morales-Carrion, Tao-tai Hsia, Matthew Gallagher

*Associate Professors* R.S. Jordan, George Stambuk, H.C. Hinton, P.F. Gallagher, Vladimir Petrov, H.M. Sachar, C.J. Herber, P.P. Hill, R.W. Kenny, Ching-Yao Hsieh, Nadine Popluiko, Dennis Doolin (*Visiting*), W.R. Johnson, P.J. Mika

*Associate Professorial Lecturers* T.P. Thornton, Bernard Ramundo, Thomas Larson, Philip True, William Lewis, Donald Robinson, D.E. Nuechterlein

*Assistant Professors* J.K. McDonald, W.M. Overgaard, G.A. Olkhovsky, Bernard Reich, W.F.E. Long II, C.F. Elliott, J.A. Morgan, Jr., Don Allensworth, A.S. Banks (*Research*)

*Assistant Professorial Lecturers* George Chacko, G.W. Grayson, Jr., R.H. Neuman, C.A. Linden

*Bachelor of Arts in the field of International Affairs.*—Prerequisite: the International Affairs curriculum, page 68.

The general requirements are stated on pages 138–41. The sixty required semester hours must include: (1) Economics 181–82; six semester hours of foreign language composition and conversation; History 153, 182; Political Science 171, 181–82, 197; (2) fifteen semester hours of electives; (3) fifteen semester hours from one of the Group Options listed below:

Group I—International Politics (relevant courses in geography, history, and political science)

Group II—International Economics (relevant courses in business administration, economics, geography, and statistics)

Group III—International Communications (relevant courses in anthropology, geography, political science, psychology, and sociology)

Group IV—Regional Studies of Africa, Europe, Far East, Latin America, Middle East, and Soviet Orbit (relevant courses in anthropology, economics, geography, history, political science, and psychology)

*Bachelor of Arts in the field of Public Affairs.*—Prerequisite: the Public Affairs curriculum, page 68.

The general requirements are stated on pages 138–41. The sixty required semester hours must include: (1) Economics 102, 121, 161–62; History 175–76; Political Science 121–22, 145, 151–52; (2) fifteen semester hours of electives; (3) twelve semester hours from one of the Group Options listed below:

Group I—Economics (Economics 101, 104, 105, 165)

Group II—Politics (Political Science 104, 111, 120, 146)

*Certificate of the Institute for Sino-Soviet Studies.*—A Bachelor's degree from an accredited college or university with an undergraduate major in a pertinent field, with emphasis on communist affairs.

The general requirements are stated on pages 146–47. The program consists of thirty semester hours of graduate study and the passing of a reading examination in Russian or Chinese, or both.

*Master of Arts in the field of International Affairs.*—A Bachelor's degree from an accredited college or university with background courses corresponding to an undergraduate major in international affairs at this University.

Required: in addition to the general requirements, pages 141–44, the following specific requirements must be met: (1) a scheduling of courses amounting to twenty-four semester hours, planned in consultation with the adviser on the basis of the student's selection from the following general and regional studies—(a) Comparative Government and Politics, Comparative Political Development, International Communications, International Communism, International Economics (including Theory and Development), International Law, International Organization, International



Politics, Modern Political Theory, and Socialist and Communist Theory; (b) modern history, government and politics, and economic history and problems of Western Europe, Eastern Europe, Soviet Union, Latin America, Middle East, Sub-Saharan Africa, South Asia, Southeast Asia, Far East; Communist China; U.S. Diplomatic History, American Foreign Policy; (c) Sino-Soviet Affairs; (2) a Master's thesis (six semester hours) written on an approved topic; and (3) a set of written examinations over three fields within the broad area of international affairs (two general fields and one regional field constitute a frequently followed pattern).

*Master of Arts in the field of Public Affairs.*—Prerequisite: a Bachelor's degree from an accredited college or university with an undergraduate major in public affairs, economics, history, or political science, depending upon the field of specialization in the Master's program.

Required: the general requirements, pages 141–43, 144. The twenty-four semester hours of required courses (exclusive of the thesis) are to be selected from one of the following fields of specialization: Domestic Economics (courses in economic development, economic policy, public finance, and national income); Domestic Politics (courses in U.S. social, constitutional, and political history; comparative government; political theory; legislative organization; jurisprudence; political parties; and public opinion).

*Master of Science in International Affairs.*—Offered in cooperation with the College of General Studies in the off-campus programs at the Air War College, Air University, Maxwell Air Force Base, Ala.; the National War College, Fort McNair, Washington, D. C.; and the Naval War College, Newport, R. I.

## Religion\*

Professor R.G. Jones (Chairman)

Associate Professors H.E. Yeide, Jr., Dewey Wallace, Jr.

Associate Professorial Lecturer A.B. Seidman

Assistant Professorial Lecturers E.W. Seaman, Rosemary Ruether

*Bachelor of Arts with a major in Religion (Field-of-Study).*—Prerequisite: the Arts and Letters curriculum, page 63, including Religion 9, 10, and 59–60.

Required: the general requirements, pages 69–73, and the passing of the Religion major examination at the end of the senior year. The coordinated field of knowledge upon which the student will be examined includes the history and literature of the world's religions with special emphasis on those of the West and the philosophical and ethical problems of religious thought. A student may elect to give special emphasis in his program to Christianity or to Judaism. A proseminar (Religion 199–200) assists the student in preparing for the major examination. A pamphlet containing a detailed description of the major is available in the offices of the Dean of Columbian College of Arts and Sciences and the Chairman of the Department of Religion.

American Thought and Civilization 101 *American Civilization* is recommended as a senior-year elective for Religion majors.

*Master of Arts in the field of Religion.*—Prerequisite: an undergraduate major in Religion at this University, or equivalent.

Required: the general requirements, pages 77–79. Of the twenty-four semester hours of required courses (exclusive of the thesis), at least twelve must be in third-group religion courses; a maximum of nine may be in a closely related field outside the Department of Religion as approved by the Department.

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



*Master of Arts in the field of Religious Education.*—Prerequisite: an undergraduate major in Religion at this University or equivalent; the following specific courses or equivalent: Education 108; Psychology 1, 22, and 29; Anthropology 1; Speech 1 or 11.

Required: the general requirements, pages 77–79. Of the twenty-four semester hours of required courses (exclusive of the thesis), at least six must be in third-group religion courses; a maximum of twelve may be in a closely related field outside the Department of Religion as approved by the Department.

*Doctor of Philosophy in the field of the History of Religion in the United States.*—See pages 77–78, 79–80.

#### FIRST GROUP

##### 9 The Old Testament (3)

Historical and literary study of the Old Testament with consideration of development of religious ideas, institutions, and outstanding personalities. (Fall—day and evening; summer 1967)

Jones

##### 10 The New Testament (3)

Study of New Testament literature from the standpoint of occasion, purpose, dominant ideas, and permanent values. Emphasis on approach, structure, and significance of the Gospels and Epistles. (Spring—day and evening)

Jones

##### 21 Introduction to Religious Thought (3)

Traditional religious concepts, language of contemporary religion amidst modern scientific and secular intellectual tendencies, and the place of religion in today's society. (Fall—day)

Yeide

##### 59–60 History of Religions (3–3)

*First half:* primitive and ancient national religions: Confucianism, Taoism, Buddhism, Hinduism, and Shintoism—their historical setting, founders, and development of religious thought and culture. *Second half:* Zoroastrianism, Judaism, Christianity, and Islam—analysis of their origin, evolution, and contemporary status. (First half: fall—day and evening; spring—day. Second half: fall—day; spring—day and evening; summer 1967.)

Wallace, Yeide

#### SECOND GROUP

##### 103 The Prophets (3)

Development of prophetism in the Old Testament; cultural, economic, psychological, and religious factors; elements of lasting value in the prophetic teaching. Study of selected prophets. (Fall—evening)

Seidman

##### 104 The Life and Thought of Jesus (3)

Comprehensive study of the life and teachings of Jesus with critical attention to sources. (Spring—day)

Staff

##### 105 The Life and Thought of Paul (3)

Backgrounds of early Christianity, first century religious and social conditions affecting the spread of Christianity, the life and journeys of Paul, Paul's presentation of the Christian faith. (Not offered 1967–68)



- 121 **Philosophical Problems of Western Religious Thought** (3) Yeide  
Classical and contemporary religious thinkers with reference to: nature of religious truth and experience; existence, character, and activity of God; predicament of man. (Spring—day)
- 122 **Christian Ethics and Modern Society** (3) Yeide  
Nature and principles of Christian life as developed by the Christian community; problems of personal conduct; application to family, social, and economic institutions. (Summer 1967)
- \*127 **Medicine, Religion, and Healing** (1) Kepler  
Introduction to the Total Care concept emphasizing the importance of religion in medical practice for patient and physician. Concept of the professional man, clergy's role in healing, Jewish and Christian faiths and their attitudes in problem areas. Case studies. (Spring—day)
- 131 **History of Christianity to the Reformation** (3) Wallace  
Rise and expansion of Christianity, development of Christian thought, and evolution of church organization and worship. (Fall—day)
- 132 **History of Modern Christianity** (3) Wallace  
Origin and development of Protestantism; Roman Catholic revival; status of Eastern churches; doctrines, worship, expansion, church and state, and relation to modern thought and life. (Spring—day)
- 135 **History of Judaism to the Talmud** (3) Seaman  
History and religious thought of Jewish people from the Maccabean revolt to compilation of the Talmud. (Fall—day)
- 136 **History of Medieval and Modern Judaism** (3) Seaman  
History and religious thought of Jewish people from compilation of the Talmud to present. (Spring—day)
- 141-42 **Religious Education** (3-3)  
Religious education in the home, church, and community; basic educational procedures and special techniques; organization and administration of religious education. (Not offered 1967-68)
- 172 **Religion in American Culture** (3) Wallace  
Growth of religious bodies and institutions in relation to American culture, development of religious thought, and analysis of the contemporary religious scene. (Spring—evening; summer 1967)
- 199-200 **Proseminar: Readings for the Major** (3-3) Wallace, Yeide  
Readings and group discussions. (Academic year—as arranged)
- THIRD GROUP**
- 209-10 **Seminar: Biblical Literature** (3-3) Jones  
Main problems of biblical literary and historical criticism. (Academic year—as arranged)
- 211-12 **Seminar: Biblical Thought** (3-3)  
Biblical interpretation of history and reality and its relation to Biblical beliefs about God, man, and the world. (Not offered 1967-68)

\* Primarily for second-year students in the School of Medicine, but open to Religion majors with the approval of the instructor. Dr. Kepler is Clinical Instructor in Pediatrics in the School of Medicine.



- 222 **Seminar: Christian Ethics** (3)  
Important tendencies in ethical reflection of the contemporary Christian Church; contributions of social sciences to that reflection. (Not offered 1967-68)
- 231-32 **Seminar: Early and Medieval Christianity** (3-3)  
Christian thought from primitive beginnings to the Reformation. (Not offered 1967-68)
- 233-34 **Seminar: Reformation and Modern Christianity** (3-3) Yeide, Wallace  
Western religious thought from the 16th century to the present. (Academic year—evening)
- 241-42 **Seminar: Religious Education** (3-3)  
Major problems in the practice of religious education. (Not offered 1967-68)
- 271 **Seminar: American Religious History to 1830** (3) Wallace  
Religious thought and life during the Colonial and early national period. (Fall—evening)
- 273 **Seminar: American Religious History since 1830** (3)  
Religious thought and life from antislavery and Civil War to present. (Not offered 1967-68)
- 291-92 **Readings and Research** (3-3) Staff  
Investigation of special problems. (Academic year—as arranged; summer 1967)
- 299-300 **Thesis Research** (3-3)  
(Academic year—as arranged; summer 1967)

### Romance Languages and Literatures\*

*Professors* G.E. McSpadden, L.A. Vigneras, Rafael Supervía, W.G. Clubb, J.W. Robb  
*Associate Professors* G.E. Mazzeo, J.A. Frey (*Chairman*), J.L. Metivier, Jr., J.F. Burks, Fred Abrams  
*Assistant Professors* Elizabeth Neyman, R.M. Riggs, G.P. Huvé, Martha Adem, Mary Ann Coffland  
*Assistant Professorial Lecturer* Esther Lawton  
*Instructors* Elizabeth Burkley, Cecilia Uribe, Anne Cordero, Julia Hicks, Dorothy Betz, Diana Bronte, Maria Oden, Herbert Sims, Nicholas Letsou, Rhoda Miller  
*Director of Language Laboratories* W.H. Ausman

Courses are generally conducted in the language concerned. For General Courses in Romance Languages and Literatures see page 341.

\* A standardized placement examination given before registration is required of all entering students who wish to continue in college the language begun in high school. Upon completion of the examination assignment is made to the appropriate course, with credit assigned on the usual basis.  
 Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.



*Bachelor of Arts with majors in (1) French Language and Literature (2) Spanish American Literature, and (3) Spanish Language and Literature (Field-of-Study).—Prerequisite: the Arts and Letters curriculum, page 63.*

Required: the general requirements, pages 69–73, and the passing of the major examination at the end of the senior year. The coordinated field of knowledge upon which the student will be examined includes the political, social, and cultural backgrounds of the literature studied; the writers and their works. Proficiency in the spoken and written language is required. Majors in Romance Languages are strongly advised to study Latin, a knowledge of which is generally required for graduate work. A proseminar in each of the major fields assists the student in his preparation for the major examination.

*Master of Arts in the fields of (1) French Language and Literature, (2) Spanish American Literature, and (3) Spanish Language and Literature.—Prerequisite: the degree of Bachelor of Arts in the appropriate field from this University, or the equivalent.*

In each field candidates will choose program A: emphasis on literary history, analysis, and criticism—preparation for doctoral studies and research; or program B: emphasis on language, history of the language, and linguistics—a terminal course of study—preparation for primary and secondary school teachers.

Required: the general requirements, pages 77–79. The thirty hours of required work must include a thesis, for which six hours of credit are allotted. The remainder of the program is arranged in consultation with the student's major adviser.

*Master of Arts in the field of Linguistics (an interdepartmental degree offered by the departments of Germanic Languages and Literatures, Romance Languages and Literatures, and Slavic and Oriental Languages and Literatures).—Prerequisite: a Bachelor of Arts degree, preferably with a major in French, German, Russian, or Spanish at this University, or the equivalent, and the approval of candidacy by the Committee on Linguistic Study.*

Required: the general requirements, pages 77–79, including a thesis and twenty-four semester hours of second- and third-group courses selected in consultation with the chairman of the department directing the Master's program and approved by the Committee on Linguistic Study. The candidate's program will normally be selected from courses in Anthropology, Chinese, English, French, German, Mathematics, Philosophy, Psychology, Slavic, Spanish, and Speech listed on pages 267–69.

*Doctor of Philosophy fields of study in Romance Languages and Literatures: (1) French Literature (Old and Middle, 17th Century, 18th Century, 19th Century, Renaissance, Modern); (2) Spanish Literature (Old, Medieval, Literature of the Siglo de Oro, 18th Century, 19th Century, Modern); (3) Spanish American Literature; (4) Linguistics; and (5) Philology.—See pages 77–78, 79–80 for requirements for the degree.*

*Bachelor of Arts in Education with teaching fields in French and in Spanish.—Prerequisite: the Education curriculum, pages 65–66.*

Required: the French option or the Spanish option and the professional courses listed on pages 96–97.

## FRENCH

### FIRST GROUP

#### 1–2 First-year French (3–3)

Staff

A year course: credit given on completion of French 2. For beginners. Pronunciation, conversation, grammar, composition, reading of modern French prose. Aural training, oral practice in language laboratory. Laboratory fee, \$17.50 a semester. (First half and second half: fall and spring—day and evening; summer 1967)



**2x First-year French (3)**

Staff

Intensive course to which are assigned entering students with one or more years of high school French whose placement tests show them inadequately prepared for the regular work of French 3. Meets six hours a week (3 hours of lecture, 2 hours of drill, 1 hour of laboratory) and carries 3 semester hours of credit. Fee, \$196 (tuition fee of \$171 plus additional fee of \$25) plus laboratory fee, \$17.50. (Fall and spring—day)

**\*3-4 Second-year French (3-3)**

Staff

A year course: credit given on completion of French 4. Conversation, grammar, composition, reading in modern French prose, introduction to French civilization. Aural training, oral practice in language laboratory. Laboratory fee, \$17.50 a semester. Prerequisite: French 1-2, 2x, or two years of high school French. (First half: fall and spring—day and evening; summer 1967. Second half: fall—day; spring—day and evening; summer 1967.)

**\*6 Second-year French (6)**

Staff

Lecture (3 hours), discussion (3 hours). Intensive, accelerated course which covers material of French 3-4. Grammar review, reading, conversation. Prerequisite: two years of high school French with grades of B or better; or B or better in French 2 or 2x. (Fall and spring—day)

**9-10 French Conversation and Composition (3-3)**

Staff

Prerequisite: French 4 or equivalent and permission of instructor. (Academic year—day and evening; summer 1967)

**11 Composition (Honors Program) (3)**

(Summer 1967—offered only as part of the Language Study in France program)

**49 French for Graduate Students (0)**

Lawton and Staff

For graduate students preparing for reading examinations. No academic credit. Tuition fee, \$171. (Fall and spring—evening; summer 1967—offered as French Readings for Nonmajor Students (3))

**\*51-52 Survey of French Literature and Civilization (3-3)**

Metivier

Social, artistic, and cultural background of French literature. Lectures, readings, recitations, and informal discussions. (Academic year—day and evening; summer 1967)

**53 Conversation and Civilization (3)**

(Summer 1967—offered only as part of the Language Study in France program)

**91-92 Analyse de texte (3-3)**

Staff

(Formerly French 101)

Methodology and vocabulary of literary criticism; application of principles of *explication de texte* to selections from prose, drama, and poetry from the Renaissance to the present. (Academic year—day)

\* French 3-4 or 6 is required, and French 51-52 is recommended, as prerequisite to all second-group courses.



SECOND GROUP

- 103 **Problems of Pronunciation and Intonation** (3) Vigneras  
Recommended for majors and required for a Bachelor of Arts in Education degree with a teaching field in French. (Fall—day)
- 109–10 **Advanced French Conversation and Composition** (3–3) Cordero, Huvé, Vigneras  
*First half:* emphasis on diction. *Second half:* emphasis on style. Prerequisite: French 10 or equivalent and permission of instructor. (Academic year—day; summer 1967—French 109)
- 119–20 **16th Century French Literature** (3–3) Metivier  
Prose, poetry, drama, and memoirs of the French Renaissance; Rabelais, Montaigne, Marot, La Pléiade, etc. Class analysis of texts, collateral reading. (Academic year—evening)
- 121–22 **17th Century French Literature** (3–3) Riggs  
History, philosophy, criticism, memoirs, letters, eloquence, drama, fiction, poetry. Class analysis of texts; collateral readings. (Not offered 1967–68)
- 123–24 **18th Century French Literature** (3–3) Vigneras  
History, philosophy, criticism, letters, drama, fiction, poetry, the “salons,” idea of progress, idea of science. Class analysis of texts, collateral reading, lectures on literature and history. (Academic year—day)
- 125–26 **19th Century French Literature** (3–3) Frey  
Poetry, drama, and novel of the 19th century with emphasis on stylistic analysis. (Academic year—evening)
- 127–28 **20th Century French Literature** (3–3) Bronte, Coffland  
Fiction, poetry, and drama from 1900 to present. Chronological examination of authors, movements. (Academic year—day)
- 129–30 **Contemporary French Literature** (3–3) Burks  
(*First half:* summer 1967. *Second half:* not offered 1967–68.)
- 199–200 **Proseminar: Readings for the Major** (3–3) Coffland, Riggs  
Conferences and group discussions. (Academic year—as arranged)

THIRD GROUP

- 212 **Historical French Grammar** (3) Vigneras  
Phonology, morphology, and syntax of Old French; its development from Vulgar Latin. Practical exercises based on texts. Prerequisite: a second-group course in French literature, Romance 279 (see General Romance Courses), and an elementary knowledge of Latin. (Not offered 1967–68)
- 213–14 **Old French** (3–3) Vigneras  
French literature to the end of the Middle Ages. Prerequisite: a second-group course in French literature and permission of instructor. (Academic year—day)



- 224 **Seminar: the Age of Rabelais** (3) Burks  
(Spring—day)
- 226 **16th and 17th Century Philosophical Literature** (3) Burks  
The emergence of a literature of ideas; emphasis on the thought of Calvin, Montaigne, Descartes, and Pascal. (Spring—day)
- 228 **Seminar: the Literary Renaissance in Europe** (3) Burks  
Study of developments in the poetry of Italy, France, and England. (Not offered 1967–68)
- 231–32 **Theater in the 17th Century** (3–3)  
Survey of the development of theatrical arts and the drama. Research papers and reports. Prerequisite: French 121–22 or equivalent. (Not offered 1967–68)
- 234 **17th Century Nondramatic Literature** (3)  
Rationalism and the revolt against authority expressed in literature. Development of classical doctrine. (Fall—day)
- 241 **The Rationalistic Current in the 18th Century** (3)  
The contribution of the *philosophes* to the intellectual evolution of France and Europe. (Fall—day)
- 242 **Seminar: the French Novel in the 18th Century** (3)  
Development of the novel in France from *La Princesse de Clèves* to the French Revolution; themes and techniques. (Not offered 1967–68)
- 244 **Special Problems in 18th Century French Literature** (3)  
(Formerly Seminar: *Diderot and the Encyclopedia*)  
(Spring—day)
- 250 **Romanticism in France** (3) Frey  
Theory and practice of romanticism in France: romantic love, Napoleonic myth, exoticism, local color, sensationalism, and religiosity as reflected in new styles of prose and poetry. (Not offered 1967–68)
- 256 **19th Century French Literature** (3) Frey  
(Summer 1967)
- 257 **Special Problems in the 19th Century Novel** (3) Frey  
Topic for 1967–68: Zola. (Fall—day)
- 258 **Special Problems in 19th Century French Poetry** (3) Frey  
(Not offered 1967–68)
- 264 **Seminar: Modern Period** (3) Coffland  
(Not offered 1967–68)
- 265 **20th Century French Theater** (3) Coffland  
(Spring—day)
- 266 **20th Century French Poetry** (3)  
(Not offered 1967–68)
- 299–300 **Thesis Research** (3–3) Staff



## FOURTH GROUP

- 398 **Advanced Reading and Research** (arr.) Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

- 399 **Dissertation Research** (arr.) Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

## ITALIAN

## FIRST GROUP

- 1-2 **First-year Italian** (3-3) Oden  
A year course: credit given on completion of Italian 2. For beginners. Pronunciation, conversation, grammar, composition, reading of modern Italian prose. Aural training, oral practice in language laboratory. Laboratory fee, \$17.50 a semester. (Academic year—day and evening; summer 1967)

- 3-4 **Second-year Italian** (3-3) Coffland  
A year course: credit given on completion of Italian 4. Conversation, grammar, composition, reading in modern Italian prose, introduction to Italian civilization. Aural training, oral practice in language laboratory. Laboratory fee, \$17.50 a semester. Prerequisite: Italian 1-2 or two years of high school Italian. (Academic year—day; summer 1967)

- 9-10 **Italian Conversation and Composition** (3-3) Oden  
Prerequisite: Italian 4 or equivalent and permission of instructor. (Academic year—day)

- 51-52 **Introduction to Italian Literature** (3-3) Coffland  
(Academic year—day)

## SPANISH

## FIRST GROUP

- 1-2 **First-year Spanish** (3-3) Staff  
A year course: credit given on completion of Spanish 2. For beginners. Pronunciation, conversation, grammar, composition, reading of modern Spanish prose. Aural training, oral practice in language laboratory. Laboratory fee, \$17.50 a semester. (First half and second half: fall and spring—day and evening; summer 1967)

- 2x **First-year Spanish** (3) Staff  
Intensive course to which are assigned entering students with one or more years of high school Spanish whose placement tests show them inadequately prepared for the regular work of Spanish 3. Meets six hours a week (3 hours of lecture, 2 hours of drill, 1 hour of laboratory) and carries 3 semester hours of credit. Fee, \$196 (tuition fee of \$171 plus additional fee of \$25) plus laboratory fee, \$17.50. (Fall and spring—day)



**\*3-4 Second-year Spanish (3-3)**

Staff

A year course: credit given on completion of Spanish 4. Conversation, grammar, composition, reading of modern Spanish prose, introduction to Hispanic civilization. Aural training, oral practice in language laboratory. Laboratory fee, \$17.50 a semester. Prerequisite: Spanish 1-2, 2x, or two years of high school Spanish. (*First half*: fall and spring—day and evening; summer 1967. *Second half*: fall—day; spring—day and evening; summer 1967.)

**\*6 Second-year Spanish (6)**

Staff

Lecture (3 hours), discussion (3 hours). Intensive, accelerated course which covers material of Spanish 3-4. Grammar review, reading, conversation. Prerequisite: two years of high school Spanish with grades of B or better, or B or better in Spanish 2 or 2x. (Fall and spring—day)

**9-10 Spanish Conversation and Composition (3-3)**

Staff

Prerequisite: Spanish 4 or equivalent and permission of instructor. (Academic year—day and evening; summer 1967)

**11 Conversation and Composition (Honors Program) (3)**

(Summer 1967—offered only as part of Language Study in Spain program)

**49 Spanish for Graduate Students (0)**

Hicks, Sims

For graduate students preparing for reading examinations. No academic credit. Tuition fee, \$171. (Fall and spring—evenings)

**\*51-52 Survey of Spanish Literature and Civilization (3-3)**

Supervia

Social, artistic, and cultural background of Spanish literature. Lectures, readings, recitations, and informal discussion. (Academic year—day; summer 1967)

**53 History and Civilization (3)**

(Summer 1967—offered only as part of Language Study in Spain program)

**91-92 Explicacion de textos (3-3)**

Adem

(Formerly Spanish 101)

Analytical introduction to Spanish and Spanish American literature. Method demonstrated and practiced on selected passages. (Academic year—day)

**SECOND GROUP\*****103 Problems of Pronunciation and Intonation (3)**

McSpadden

Descriptive and practical review of Spanish sounds and inflections. Remedial exercises. Recommended for majors; required for the Bachelor of Arts in Education degree with teaching field in Spanish. (Fall—day)

**109-10 Advanced Spanish Conversation and Composition (3-3)**

Mazzeo

*First half*: emphasis on diction. *Second half*: emphasis on style. Prerequisite: Spanish 10 or equivalent and permission of instructor. (Academic year—day; summer 1967—Spanish 109)

\* Spanish 3-4 or 6 is required, and Spanish 51-52 is recommended, as prerequisite to all second-group courses in Spanish.



- 119-20 **Medieval Spanish Literature** (3-3) Neyman  
A survey by genre of the literature of the Middle Ages. (Not offered 1967-68)
- 121-22 **Spanish Literature of the Golden Age** (3-3) Abrams  
Classic drama, the ballad, lyric poetry, prose. Class analysis of texts, collateral reading. (Academic year—day)
- 123-24 **Cervantes: Don Quijote** (3-3) McSpadden  
Life and works of Cervantes: the *Quijote* and its relationship to other works of the Golden Age. Lectures, discussions, and reports. (Not offered 1967-68)
- 125-26 **Modern Spanish Literature** (3-3) Mazzeo  
Prose, poetry, and drama of the 18th and 19th centuries. Class analysis of texts, collateral reading, lectures on literature and history. (Not offered 1967-68)
- 127-28 **Contemporary Spanish Literature** (3-3) Supervía  
Prose and poetry of the 20th century. Class analysis of texts, collateral reading, lectures on literature and history. (Academic year—day)
- 129 **The Romantic Drama in Spain** (3) Mazzeo  
Lectures on Spanish Romantic Drama; class analysis of representative plays; collateral reading. (Not offered 1967-68)
- 151-52 **The Spanish American Novel** (3-3) Robb  
Development of the novel in Spanish America. Lectures, collateral reading, and class analysis of texts. (Not offered 1967-68)
- 155-56 **Spanish American Literature to 1880** (3-3) Robb  
Literature of Spanish America from colonial period to latter part of 19th century. Lectures, collateral reading, reports, and class analysis of important works. (*First half*: summer 1967. *Second half*: not offered 1967-68.)
- 157-58 **Spanish American Literature since 1880** (3-3) Robb  
Literature of Spanish America from 1880 to the contemporary period. Lectures, collateral reading, reports, and class analysis of important works. (Academic year—evening)
- 197-98 **Proseminar: Readings for the Major in Spanish American Literature** (3-3) Robb  
Required of all majors. Conferences and group discussions. (Academic year—as arranged)
- 199-200 **Proseminar: Readings for the Major in Spanish Language and Literature** (3-3) Adem, Mazzeo  
Required of all majors. Conferences and group discussions. (Academic year—as arranged)



## THIRD GROUP

- 212 Historical Spanish Grammar (3)** McSpadden  
Phonology, morphology, syntax, and lexicology of Old Spanish, including its development from Vulgar Latin. Practical exercises based on texts. Prerequisite: a second-group course in Spanish literature, Romance 279 (see General Romance Courses), and an elementary knowledge of Latin. (Fall—day)
- 214 Old Spanish (3)** McSpadden  
Literature and language: *El poema de Mio Cid*, *El Conde Lucanor*, *El Libro de Buen Amor*, etc. Prerequisite: second-group course in Spanish literature, Romance 279 (see General Romance Courses), and an elementary knowledge of Latin. (Not offered 1967–68)
- 221 Seminar: Works of Cervantes (3)** McSpadden  
Problems of composition, interpretation, criticism, literary history, and aesthetics. (Not offered 1967–68)
- 224 Problems in Spanish Renaissance Literature (3)** Abrams  
(Formerly Seminar: *the Renaissance in Spain*)  
(Not offered 1967–68)
- 225 Special Problems in Golden Age Literature (3)** Abrams  
(Spring—day)
- 229 The Two Quijotes (3)** Abrams  
The secret literary war between Cervantes and Avellaneda in the original and false versions of the *Quijote*. Explication of cryptographic keys to both texts. (Not offered 1967–68)
- 231 Seminar: 18th Century Spanish Writers (3)** Mazzeo  
Lectures and analysis of principal authors and works; relationships with subsequent literary movements. (Fall—day)
- 242 Seminar: Spanish Romanticism (3)** Mazzeo  
Lectures and analysis of principal authors and works. Collateral readings. Problems of origins and developments. (Spring—day)
- 244 Seminar: Naturalism and the Spanish Novel (3)** Mazzeo  
Development of Naturalism in 19th century Spain. Analysis of representative works of Pardo, Bazán, Clarín, Blasco-Ibáñez, and others. (Not offered 1967–68)
- 245–46 Seminar: Works of Galdós (3–3)** Supervia  
Ideological and stylistic analysis; relationship of his works to literary movements of the second half of the 19th century. (Not offered 1967–68)
- 251 Seminar: Works of Unamuno and Ortega y Gasset (3)** Supervia  
Study of their thought; analysis and commentary on the texts. (Fall—day)
- 252 Spanish Literature since the Civil War (3)** Adem  
(Spring—day)



- 253 **Seminar: Contemporary Spanish American Poets (3)** Robb  
Selected post-Modernist poets: G. Mistral, P. Neruda, "Los Contemporáneos," O. Paz, L. De Greiff, the Nadístas. (Not offered 1967-68)
- 261 **Seminar: Spanish American Essayists (3)** Robb  
The Spanish American essay as an artistic form; studies in selected modern essayists—Rodó, Mallea, Vasconcelos, and Arciniegas. (Fall—day)
- 264 **Seminar: Recent Trends in Spanish American Fiction (3)** Robb  
Contemporary *cuéntistas* and novelists: J. L. Borges, J. J. Arreola, A. Yáñez, C. Fuentes, E. Godoy, J. Cortázar, and A. Carpentier. (Not offered 1967-68)
- 266 **Seminar: Alfonso Reyes (3)** Robb  
Alfonso Reyes the essayist-artist, poet, and complete humanist as studied in his various prose and poetic works. (Spring—day)
- 299-300 **Thesis Research (3-3)** Staff  
(Academic year—as arranged; summer 1967)

## FOURTH GROUP

- 398 **Advanced Reading and Research (arr.)** Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)
- 399 **Dissertation Research (arr.)** Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

GENERAL COURSES IN ROMANCE LANGUAGES  
AND LITERATURES

- 270 **Experimental Phonetics (3)** McSpadden  
History; problems and methods of analysis in the physiological and acoustical branches of phonetics and intonation, their relationships, their application to the Romance languages, and oral aspects of the Romance literatures. (Fall—day)
- 275-76 **Comparative Romance Languages and Literatures I-II (Portuguese) (3-3)** Robb  
For Doctor of Philosophy students. Lectures, discussions, exercises, and readings. (Not offered 1967-68)
- 277-78 **Comparative Romance Languages and Literatures III-IV (Portuguese) (3-3)** Robb  
For Doctor of Philosophy students. Portuguese and Brazilian literatures from Camões to the 20th century. (Academic year—day)
- 279 **Introduction to Romance Philology and Linguistics (3)** McSpadden  
Principles found in the development of the Romance languages and methods of analysis at the present time. General course for graduate



students in the fields of the Romance languages and literatures. Prerequisite: an elementary knowledge of Latin. Normally followed by French 212 or Spanish 212. (Fall—day)

**283 Problems of Teaching Romance Languages and Literatures in College (3)**

McSpadden

For Doctor of Philosophy students. Principles and problems of learning and teaching the language and literature. Apprenticeship in college classes and the language laboratory. (Spring—day)

### Sino-Soviet Studies

See "Institute for Sino-Soviet Studies."

### Slavic and Oriental Languages and Literatures\*

*Professor Helen Yakobson (Chairman)*

*Associate Professors Nadine Popluiko, William Key, Chung-wen Shih*

*Assistant Professors G.A. Olkhovsky, Victoria Sandor, H.T. Lu, G.C.Y. Wang*

*Assistant Professorial Lecturers Milenko Filipovitch-Nikatch, J.R. Child, Catherine Coulter, M.L. Howder, P.A. Luelsdorff, Marguerite Nelson*

*Instructor Irene Thompson*

*Lecturer E.W. Tetrault*

*Bachelor of Arts with a major in Russian Language and Literature (Field-of-Study).—Prerequisite: the Arts and Letters curriculum, page 63.*

Required: the general requirements, pages 69–73, and the passing of the major examination at the end of the senior year. The coordinated field of knowledge upon which the student will be examined includes the political, cultural, and social backgrounds of Russian literature; Russian cultural history; the Russian language—its structure and usage. Proficiency in spoken and written Russian language is required. Students who are already proficient in Russian may, upon passing an appropriate examination, waive any or all of the first-group language courses, as well as up to six hours of second-group language courses. The Department provides a proseminar intended to assist the student in his preparation for the major examination.

*Master of Arts in the field of Russian Language and Literature.—Prerequisite: the degree of Bachelor of Arts with a major in Russian Language and Literature from this University, or equivalent.*

Required: the general requirements, pages 77–79. The thirty semester hours of required work must include a thesis, for which six hours of credit are allotted. The remainder of the program is arranged in consultation with the student's adviser.

*Master of Arts in the field of Linguistics (an interdepartmental degree offered by the departments of Slavic and Oriental Languages and Literatures, Germanic Languages and Literatures, and Romance Languages and Literatures).—Prerequisite: a Bachelor of Arts degree, preferably with a major in Russian, French, German, or Spanish at this University, or the equivalent, and the approval of candidacy by the Committee on Linguistic Study.*

\* A standardized placement examination given before registration is required of all entering students who wish to continue in college the language begun in high school. Upon completion of the examination assignment is made to the appropriate course, with credit assigned on the usual basis.

Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



Required: the general requirements, pages 77-79, including a thesis and twenty-four semester hours of second- and third-group courses selected in consultation with the chairman of the department directing the Master's program and approved by the Committee on Linguistic Study. The candidate's program will normally be selected from courses in Anthropology, Chinese, English, French, German, Mathematics, Philosophy, Psychology, Slavic, Spanish, and Speech listed on pages 267-69.

*Bachelor of Arts in Education with a teaching field in Russian.*—Prerequisite: the Education curriculum, pages 65-66.

Required: the Russian option and the professional courses listed on pages 96-97.

## CHINESE (MANDARIN)

### FIRST GROUP

#### 1-2 First-year Chinese (3-3)

Wang

A year course: credit given on completion of Chinese 2. For beginners. Pronunciation, conversation, reading, writing basic Chinese characters. Aural training, oral practice in language laboratory. Laboratory fee, \$17.50 a semester. (Academic year—evening; summer 1967)

#### 3-4 Second-year Chinese (3-3)

Wang

A year course: credit given on completion of Chinese 4. Continuation of grammar and spoken Chinese, more emphasis on the written language, reading, writing commonly used Chinese characters, reading selected writings. Aural training, oral practice in language laboratory. Laboratory fee, \$17.50 a semester. Prerequisite: Chinese 1-2 or equivalent. (*First half*: fall and spring—evening. *Second half*: spring—evening.)

#### 5-6 Intensive First-year Chinese (6-6)

Shih

A year course: credit given on completion of Chinese 6. Classroom (6 hours), tutorial (4 hours), laboratory (1 hour). Intensive beginners' course in fundamentals of grammar and pronunciation with graded reading and written practice. Tutorial sessions to facilitate aural comprehension and oral expression. Listening comprehension and oral practice in language laboratory. Laboratory fee, \$17.50 a semester. (Academic year—day)

#### 7-8 Intensive Second-year Chinese (6-6)

Lu

A year course: credit given on completion of Chinese 8. Classroom (6 hours), tutorial (4 hours), laboratory (1 hour). Intermediate intensive course. Reading basic texts. Writing short pieces. Conversation. Systematic review of grammar. Laboratory fee, \$17.50 a semester. Prerequisite: Chinese 5-6 or equivalent. (Academic year—day)

### SECOND GROUP

#### 101-2 Readings in Modern Chinese (3-3)

Wang

Reading of selected Chinese periodicals and texts in social sciences. Study of current political terminology and Chinese idiom. (Academic year—evening)

#### 105 Introduction to Classical Chinese (6)

Staff

Introduction to classical writings in Chinese literature, history and philosophy. Prerequisite: Chinese 4 or 6. (Fall—day)



**106 Readings in Modern Chinese Literature (6)**

Staff

Selected readings in modern Chinese plays, stories, and essays. Prerequisite: Chinese 8 or equivalent. (Spring—day)

**125 Chinese Linguistic Structure (3)**

Staff

Descriptions and explanations of grammatical relations and transformations of Mandarin Chinese. (Fall—day)

**126 Comparative Chinese-English Linguistic Structure (3)**

Staff

Contrastive study of the sound and sentence structure in English and Chinese. Fundamental concepts of linguistic theory and their application in foreign language teaching. (Spring—day)

**163 Chinese Literature in Translation (3)**

Shih

General survey of the development of Chinese literature from ancient times to present. Major works will be studied in terms of their historical development. (Fall—day)

**SLAVIC****FIRST GROUP****1-2 First-year Russian (3-3)**

Yakobson and Staff

A year course: credit given on completion of Slavic 2. Beginners' course in fundamentals of grammar and pronunciation with graded reading, oral drill, and written practice. Listening comprehension and oral practice in language laboratory. Laboratory fee, \$17.50 a semester. (First half and second half: fall and spring—day and evening; summer 1967)

**3-4 Second-year Russian (3-3)**

Yakobson and Staff

A year course: credit given on completion of Slavic 4. Systematic review of grammar. Study of special problems of Russian morphology and syntax. Oral and written reports on assigned topics. Laboratory fee, \$17.50 a semester. Prerequisite: Slavic 1-2 or two years of high school Russian. (First half: fall—day and evening; spring—evening. Second half: fall—evening; spring—day and evening.)

**5-6 Intensive First-year Russian (6-6)**

Staff

(Intensive First-year Russian was formerly Russian 7. Russian 5-6 was formerly Accelerated First- and Second-year Russian)

A year course: credit given on completion of Russian 6. Classroom (6 hours), tutorial (4 hours), laboratory (1 hour). Beginners' intensified course in fundamentals of grammar and pronunciation with graded reading and written practice. Tutorial drill sessions to facilitate aural comprehension and oral expression. Listening comprehension and oral practice in language laboratory. Laboratory fee, \$17.50 a semester. (Academic year—day)

**7-8 Intensive Second-year Russian (6-6)**

Staff

(Russian 7-8 replaces former 7 Intensive First-year Russian and 8 Intensive Second-year Russian)

A year course: credit given on completion of Russian 8. Classroom (6 hours), tutorial (4 hours), laboratory (1 hour). Intermediate intensified course. Systematic review and study of special problems of Russian morphology and syntax. Oral reports on assigned topics. Laboratory fee, \$17.50 a semester. Prerequisite: Russian 5-6 or equivalent. (Academic year—day)



- 9-10 **Russian Conversation and Composition** (3-3) Staff  
Listening comprehension; oral and written practice. Laboratory fee, \$17.50 a semester. Prerequisite: Slavic 3-4 or 7-8, or permission of instructor. (Academic year—day)
- 47 **Beginning Russian for Reading Examination Candidates** (0) Staff  
For graduate students with little or no knowledge of Russian who intend to use the language as a research tool. No academic credit. Tuition fee, \$171. (Fall—evening; summer 1967)
- 49 **Russian Readings for Nonmajor Students** (3) Staff  
Primarily for graduate students preparing for reading examinations. Undergraduates admitted with permission of instructor. No academic credit for graduate students. Prerequisite: Slavic 4, 8, or 47; or equivalent. (Spring—evening; summer 1967)
- 91-92 **Introduction to Russian Literature** (3-3) Coulter  
Survey of Russian literature, in translation, from earliest periods through literary masterpieces of the 19th and early 20th centuries. Lecture, recitation, and discussion—in English. (Academic year—day; summer 1967)
- 93-94 **Introduction to Slavic (non-Russian) Literature** (3-3) Filipovitch-Nikatch  
Survey of non-Russian Slavic literatures, in translation, from early periods to present; emphasis on the contemporary scene. Lecture, recitation, and discussion—in English. (Academic year—evening)

## SECOND GROUP

- 101-2 **Readings in Modern Russian** (3-3) Yakobson and Staff  
Representative reading and translation of Soviet periodicals and selected texts in social sciences. Study of current political terminology, abbreviations, Soviet idiom. Prerequisite: Slavic 4 or 8, or equivalent. Academic year—day)
- 106 **Problems of Pronunciation and Intonation** (3) Key  
Systematic training in Russian pronunciation. Comparison of Russian and English sound systems. Recommended for majors; required for Bachelor of Arts in Education degree with a teaching field in Russian. (Spring—evening)
- 109-10 **Advanced Russian Conversation and Composition** (3-3) Staff  
Developing proficiency in oral and written expression. Prerequisite: Russian 8, 10, or equivalent. (Academic year—evening)
- 125 **Russian Linguistic Structure** (3) Child  
Descriptive treatment of phonology, morphology, syntax of contemporary Russian—in English. (Fall—evening)
- 126 **Comparative Russian-English Linguistic Structure** (3) Child  
Contrastive treatment of Russian and English phonology, morphology, syntax; emphasis on pedagogical applications—in English. (Spring—evening)



**128 Dostoevsky, the Man and the Artist (3)**

Popluiko

Sources and development of his philosophical, religious, and aesthetic ideas. His influence on Russian and Western literature. Lectures, discussions, and reports—in English. (1968–69 and alternate years: spring—evening)

**141–42 19th Century Russian Literature (3–3)**

Staff

Major Russian writers and literary trends from end of the 18th century to Chekhov: fiction, poetry, drama. Lectures, individual reports on assigned topics, and class analysis of selected works—in Russian. Prerequisite: Slavic 4 or 8, or equivalent. (1968–69 and alternate years: academic year—evening)

**143–44 The Russian Novel (3–3)**

Staff

Genesis and development of the Russian novel. Evolution of form and techniques. Analysis of style, philosophy, and political ideology of representative novels of the 19th and 20th centuries—in English. (1967–68 and alternate years: academic year—day)

**145–46 The Russian Short Story (3–3)**

Popluiko

Study of historical and critical development of the short story form in Russia. Lectures, reports, and class analysis—in Russian. Prerequisite: Slavic 4 or 8, or equivalent. (1968–69 and alternate years)

**151–52 20th Century Russian Literature (3–3)**

Popluiko

Symbolism, acmeism, futurism, and realism: prose, poetry, drama, criticism. Class analysis of selected texts. Recitation and reports in Russian. Prerequisite: Slavic 4 or 8, or equivalent. (1967–68 and alternate years: academic year—evening)

**156 Leo Tolstoy, His Life and Works (3)**

Popluiko

Evolution of Tolstoy's artistic and philosophical ideas. Tolstoy's impact on Russian literature and society. Lectures, reports, and classroom analysis of his major works—in English. (1967–68 and alternate years: spring—evening)

**161–62 Russian Culture (3–3)**

Olkhovsky

Survey of Russian cultural heritage from origins of ancient Russia to present—in English. Lecture, recitation, discussion, and individual reports on assigned topics. (Academic year—evening)

**165 Soviet Literature (3)**

Popluiko

Survey of major literary figures, movements, styles. Revolution and its impact on literature and writers. Revival of psychological novels, short story, contemporary poetry—in English. (Fall—evening)

**197 Special Problems in Teaching Russian (3)**

Yakobson

Discussion of methodology, examination of textbooks, observation of classroom procedures. Prerequisite: 18 semester hours of Russian language. (Spring—evening)

**199–200 Proseminar: Readings for the Major in Russian Language and Literature (3–3)**

Staff

Conferences and group discussions. (Academic year—as arranged)



THIRD GROUP

- 205 **Old Church Slavonic** (3) Key  
Study of history and structure of Old Church Slavonic phonology and morphology. (1967-68 and alternate years: fall—day)
- 206 **Readings in Old Russian Literature** (3) Key  
Reading and analysis of Church-Slavonic texts in original, from 11th to 17th century. Prerequisite: Slavic 205. (1967-68 and alternate years: spring—day)
- 215-16 **History of the Russian Literary Language** (3-3) Key  
Historical background for an understanding of phonology and morphology of Modern Russian. (1968-69 and alternate years)
- 225 **Pushkin and the Poets of His Time** (3) Popluiko  
Pushkin's predecessors; Pushkin's influence on the literature of his time. Lermontov—the heir to Pushkin's poetic tradition. (1967-68 and alternate years: fall—evening)
- 253 **Seminar: Literary Criticism** (3) Staff  
Study of leading Russian critics and their role in the development of Russian literature; the emergence of various literary schools. Independent topic announced each semester; may be repeated for credit. Topic for 1967-68: 19th Century. (Fall—day)
- 299-300 **Thesis Research** (3-3)  
(Academic year—as arranged)

Sociology\*

Professors R.W. Stephens (*Chairman*), I.H. Cisin, Norman Kaplan, H.J. Parry (*Visiting*), R.G. Brown  
Associate Professor G.S. Rosenberg (*Visiting*)  
Associate Professorial Lecturers Oliver Moles, S.R. Nikkel, Artemis Emmanuel, Kenneth Reichstein, J.S. Schiller  
Assistant Professors Thomas Burns, T.F. Courtless, Jr.  
Assistant Professorial Lecturers Robert Guerrin, Jackwell Susman  
Instructor J.L. Tropea  
Lecturers Charlotte Anker, S.D. Webb

*Bachelor of Arts with a major in Sociology (Departmental).*—Prerequisite: the Arts and Letters curriculum, page 63, including Sociology 1-2 and 51 or equivalent.

Required: in addition to the general requirements, pages 69-73, twenty-four semester hours in Sociology, which must include 141, 149, 191; and Statistics 53 or 104.

American Thought and Civilization 101 *American Civilization* is recommended as a senior-year elective for Sociology majors.

*Master of Arts in the field of Sociology.*—Prerequisite: the degree of Bachelor of Arts with a major in Sociology at this University or the equivalent. The undergraduate program must include Statistics 104 or equivalent.

Required: the general requirements, pages 77-79. All courses must be approved in advance by the adviser.

\* Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.



## FIRST GROUP

**\*1-2 Introductory Sociology (3-3)**

Development of culture and personality, impact of groups and institutions on man's social behavior. Survey of fields within sociology. (Academic year—day and evening; summer 1967)

**41 American Social Problems (3)**

Analysis of major social problems confronting the United States. Factors producing social problems, their nature and treatment. (Fall and spring—day; summer 1967)

**51 Criminology (3)**

(Formerly Sociology 136)

Nature and distribution of crime, police and court systems, prisons and reformatories; treatment and prevention of crime. (Fall and spring—day and evening; summer 1967)

## SECOND GROUP

**110 The Sociology of Work (3)**

Brown

Introductory survey of industrial sociology; sociology of occupations and professions; industry-community relations; and analysis of large, complex organizations. (1967-68 and alternate years: fall—day)

**124 Medical Sociology (3)**

Brown

Sociological factors and processes which relate to physical and mental health and disease, analysis of patterned social relationships in the field of health and medicine, the hospital as a social system. (1968-69 and alternate years; summer 1967)

**125 Sociology of Religion (3)**

Yeide

Introduction to history of the discipline; analysis of reciprocal impact of secular upon religious and religious upon secular institutions. (1967-68 and alternate years: fall—day)

**126 Urban Sociology (3)**

Place of the city in larger society; growth of the city, problems of urban living, group life, personality, urban housing, city planning, and suburban development. (1967-68 and alternate years: spring—day)

**127 Population Problems (3)**

Composition of populations, trends in population growth and population pressure, factors producing population movements, effects of migration, population policies: eugenics and birth control. (1968-69 and alternate years; summer 1967)

**128 Small Group Processes (3)**

Burns

Human interaction in small groups: group structure, social control and influence, communication processes; deviance and conformity analyzed. (1967-68 and alternate years: fall—day)

**129 Race and Minority Groups (3)**

Stephens

Analysis of relationships between dominant and minority groups in society, particularly in the United States; nature and range of problems;

\* Sociology 1 is prerequisite to second- and third-group courses in Sociology.



analysis of the phenomenon of prejudice. (Fall—day and evening; summer 1967)

- 130 **Social Stratification: Class and Status** (3) Stephens  
Nature of class structure patterns of status, prestige relations, differential class behavior, analysis of comparative social structure and social mobility. (1968–69 and alternate years)

- 131 **Social Institutions** (3) Emmanuel  
Functional analysis of basic social institutions: family, education, religion, economy, and state in the structure of American Society. (1967–68 and alternate years: fall—evening)

- 133 **Sociology of Education** (3)  
Analysis of the social nature of education. (Summer 1967)

- 134 **Marriage and the Family** (3)  
Courtship as a social process, marriage and marital adjustment, development of the family, parent-child relations, family problems, disorganization, divorce and family reorganization. (1967–68 and alternate years: spring—evening)

- 135 **Juvenile Delinquency** (3) Courtless, Tropea  
Factors producing delinquency, juvenile detention, the juvenile court, training schools, treatment of offenders. Prerequisite: Sociology 51. (Spring—day; summer 1967)

- 137 **Sociology of Law** (3) Reichstein  
Law as a social phenomenon and agency of social control. Analysis of problems of legal concepts, doctrine, and institutions. (1968–69 and alternate years)

- 138 **Social Disorganization** (3) Cisin  
Analysis of factors contributing to disruption of social groups, institutions and communities; study of attempts to establish social controls to prevent, minimize, or mitigate the effects of socially disruptive conditions and events. (1967–68 and alternate years: spring—evening)

- 139 **Society and the Deviant** (3) Tropea  
Analysis of relationship of society, socialization, and deviancy. Social responses to deviancy and criminal offenders; rehabilitative programs in community, courts, and schools. Prerequisite: Sociology 51. (1968–69 and alternate years)

- 141–42 **Social Research Methods** (3–3) Cisin  
*First half:* introduction to scientific method in the development of social theory and the solution to social problems. *Second half:* translation of concepts into indices and the analysis and interpretation of research results, measurement, scales and scoring, hypothesis testing. (Academic year—as arranged)

- 144 **Public Opinion and Mass Communication** (3) Parry  
Communication process with emphasis on international communications, propaganda, and mass media; measurement of propaganda campaigns. (Fall—day)



**147 Sociology of Complex Organizations (3)**

Burns

Sociological analysis of large scale organizations, individual accommodations to such organizations, impact of large organizational pattern on American social life. (1967-68 and alternate years: spring—day)

**149 Development of Social Theory (3)**

Stephens

Systematic study of important schools of sociological theory, both European and American development; evaluation of scientific contributions of each school. (Spring—day; summer 1967)

**191 Current Emphases in Sociology (3)**

Staff

Analysis and evaluation of recent developments in the general field of sociology and a review and discussion of basic concepts. Required course for all Sociology majors in the senior year. (Fall—day and evening; summer 1967)

**THIRD GROUP****220 Religious Institutions in the United States (3)**

Yeide

Structural variety of religious institutions and patterns of interaction between religious and secular institutions in contemporary American life. (1967-68 and alternate years: spring—evening)

**223 Immigration and Assimilation (3)**

Examination of the nature and scope of immigration, analysis of adjustment of immigrants to a receiving society, formation of ethnic and minority groups, the American experience. (Not offered 1967-68)

**225 Seminar: Small Groups (3)**

Burns

General characteristics of small groups and their measurement, evaluation of small group research and theory, individual reports and projects. (1967-68 and alternate years: spring—evening)

**231-32 Seminar: Advanced Social Research Methods (3-3)**

Cisin

Intensive study and evaluation of current trends in the methodology of social research. Discussion on individual student projects and recently published research. (Not offered 1967-68)

**233-34 Seminar: Theory Construction and Testing (3-3)**

Burns

Development in these areas: mathematical representations in the social sciences and applications to empirical research, human learning and decision making, social interaction in small groups and large scale organizations. (Not offered 1967-68)

**237 Seminar: Family Relations (3)**

Moles

Recent research and theory on aspects of family structure and functioning, their antecedents in the larger social order, and their consequences for individual family members. Special projects and papers. (Fall—evening; summer 1967)

**240 Sociology of Occupations (3)**

Brown

Analysis of occupational roles and structures and changes within them; recruitment and training; adjustment problems at various stages of the career; interrelationships of stratification systems, life styles, and occupations. (1967-68 and alternate years: fall—evening)



- 241 **Seminar: Population Research and Analysis (3)**  
Experience in some of the techniques of population research. Sampling, questionnaire construction, and interviewing; tabular presentation, data analysis and research experience stressed. (1968-69 and alternate years)
- 242 **Sociology of Health and Illness (3)** Brown  
Sociological analysis of social and cultural factors in the etiology and treatment of illness. Specifically covers social epidemiology, health and the community, the patient and treatment, and social and cultural theory in health and illness. (1967-68 and alternate years: spring-evening)
- 243 **Seminar: Industrial Sociology (3)** Brown  
Analysis of problems of the organization of work in industry, government, business; problems of decision making, recruitment, allocation of authority, informal organization, and inter-organizational relations. (1968-69 and alternate years)
- 244 **Seminar: American Class Structure (3)** Stephens  
(1968-69 and alternate years)
- 248 **Comparative Analysis of Complex Organizations (3)** Burns  
Analysis of selected complex organizational types under various cultural, economic, and political conditions; relation of these to goals, structure, and functioning of the organizations. Organization topics alternate each semester: the Communist Party, the military organization, the university organization, the industrial corporation. (Spring-evening)
- 250 **Seminar: Science and Society (3)** Kaplan  
Analysis of sociocultural and political factors influencing and affecting the development and structure of science. Development of national science policies; relationship of universities, government, and science in the context of society. (Spring-evening)
- \*259 **Law and Criminology I: Search for the Causes of Criminal Behavior (3)** Courtless  
Orientation toward the sociocultural context of various causation theories, search for causal factors traced historically, emphasis on current causal propositions generated by various disciplines, and appraisal of possible effectiveness of those theories in social control of deviant behavior. (Fall-evening)
- †260 **Interdisciplinary Seminar on the Juvenile Court (3)** Ferster  
Sociological, psychological, and psychiatric views on prevention, diagnosis, and treatment; analysis of statutes, court rules, and reported cases pertaining to delinquency, dependency, custody, and child abuse. Emphasis on the role of the lawyer in this court. (Spring-evening)

\* Same as Law 417 (2). Graduate students registering for Sociology 259 make special arrangements with the instructor for supplementary assignments equivalent to one additional semester hour.  
† Same as Law 426 (2). Graduate students registering for Sociology 260 make special arrangements with the instructor for supplementary assignments equivalent to one additional semester hour.  
Mrs. Ferster is Associate Professor of Law.



**\*261 Law and Criminology II: Society's Responses to the Criminal Offender (3)**

Courtless

Emphasis on society's changing responses to criminal and delinquent behavior, and research findings relative to the effectiveness of these responses. Analysis of treatment strategies to facilitate communication between members of the legal profession and behavior scientists. (Spring—evening)

**295 Research (arr.)**

Staff

May be repeated once for credit. (Fall and spring—as arranged; summer 1967)

**299-300 Thesis Research (3-3)**

Staff

(Academic year—as arranged; summer 1967)

**Spanish**

See "Romance Languages and Literatures."

**Special Education†**

*Professor Perry Botwin (Chairman)*

*Professorial Lecturer Bertice Cornish*

*Assistant Professors M.G. Van Dyke, R.W. Prouty, R.S. Cottrell, Jr., Margaret Moss*

*Special Lecturer G.M. Fenichel*

*Master of Arts in Education with a field in Special Education.—See pages 100-103.*

*Education Specialist.—See page 104.*

*Doctor of Education.—See pages 105-7.*

**THIRD GROUP****201 Education of Exceptional Children (3)**

Botwin

(Formerly Education 180)

For prospective teachers. Educational modifications necessary to accommodate children with mental, physical, social, and emotional deviations in a school program. Prerequisite: Psychology 22 or equivalent, and at least 6 semester hours of foundation courses in Education. (Fall—day; summer 1967)

Prouty

**202 Nature and Needs I: the Mentally Retarded (3)**

(Formerly Education 181)

Nature and needs of children with varying degrees of retardation. Causation and diagnosis of retardation; psychological and sociological implications. Principles of learning with respect to teaching retarded

\* Same as Law 418 (2). Graduate students registering for Sociology 261 make special arrangements with the instructor for supplementary assignments equivalent to one additional semester hour.

† Staff of Instruction for the academic year 1966-67; Chairman for 1967-68.



children. Prerequisite: Psychology 22 or equivalent, and at least 6 semester hours of foundation courses in Education. (Fall—evening; summer 1967)

203 **Teaching Mentally Retarded Children (3)** Prouty  
(Replaces former Education 185 and 186)

Educational methods and curricula developed for the mentally retarded from nursery school through junior high school. Organization and planning of instructional activities; selection and preparation of materials. Prerequisite: Special Education 201 and 202, or permission of instructor. (Fall—evening; summer 1967—offered as Education 185 and 186)

204 **Nature and Needs IV: the Culturally Disadvantaged (3)** Prouty

Environmental factors within our society which disadvantage children's capabilities to achieve school and life success. Early experiential deprivation, home and neighborhood values and expectancies, and self-concept development. Admission by permission of instructor. (Spring—evening)

240 **Nature and Needs II: the Emotionally Disturbed (3)** Van Dyke  
(Formerly Education 187)

Analysis of educational provisions for seriously disturbed children: definitions, characteristics, identification, and programs for prevention and re-education. Admission by permission of instructor. (Fall—evening; summer 1967)

241 **Preprofessional Internship: Emotionally Disturbed Children (3)** Van Dyke

Practicum experience early in the training sequence. Directed observation of, and interaction with, emotionally disturbed children in a field setting, with supervision of University staff. Admission by permission of the instructor. (Fall—as arranged)

242 **Clinical Teaching of Emotionally Disturbed Children (3)** Staff

Lectures and discussions exploring psychoeducational techniques of teaching emotionally disturbed children and adolescents, interpersonal interaction between teachers and disturbed children. Selection of teaching methods and materials. Admission by permission of instructor. (Fall—evening)

260 **Nature and Needs III: Crippled or Health Impaired (3)** Cornish  
(Formerly Education 329)

Theory of crippling and other health-impairing conditions as they affect the needs of children. Examination of curricula. Prerequisite: Special Education 201 and permission of instructor. (Fall—evening; summer 1967)

261 **Methods and Materials for Crippled or Health Impaired (3)** Cornish

Methods and materials for teaching children with orthopedic, neurological, and other health-related disorders at different maturational levels. Organization and planning of instructional activities. Prerequisite: Special Education 201 and 260, or permission of instructor. (Fall—day)

290 **Practicum in Teaching Mentally Retarded (6)** Prouty, Cottrell  
(Special Education 290, 291, 292 replace former Education 189)

Supervised student teaching in classrooms for mentally retarded children. Minimum of 150 clock hours required. (Spring—as arranged)



- 291 **Practicum in Teaching Emotionally Disturbed** (6) Van Dyke  
*(Special Education 290, 291, 292 replace former Education 189)*  
 Supervised classroom teaching of emotionally disturbed children. Minimum of 150 clock hours required. (Spring—as arranged; summer 1967)
- 292 **Practicum in Teaching Crippled or Health Impaired** (6) Cornish  
*(Special Education 290, 291, 292 replace former Education 189)*  
 Supervised classroom teaching of children with orthopedic, neurological, and other health-related disorders. Minimum of 150 clock hours required. (Spring—as arranged)
- 297 **Research in Special Education** (3) Botwin  
 Individual research under guidance of staff member. Program and conferences arranged with adviser. Admission by permission of staff. May be repeated once for credit. (Fall and spring—as arranged)
- 301 **Psychology of Exceptional Children** (3) Prouty  
*(Formerly Education 321)*  
 Research on social, emotional, physical, and learning characteristics of handicapped children. Admission by permission of instructor. (Fall—evening; summer 1967)
- 302 **Problems and Issues in Mental Retardation** (3) Cottrell  
*(Formerly Education 322)*  
 Identification, diagnosis, and placement; problems involved in providing education and social control; teaching methodology; equipment and supplies. Admission by permission of instructor. (Fall—evening)
- 303 **Administration and Supervision of Special Education** (3) Botwin  
*(Formerly Education 323)*  
 Philosophy and nature of special education; program organization, administration, and development. Surveying local level needs; program evaluation and supervision. Admission by permission of instructor. (Spring—evening; summer 1967)
- 304 **Recent Research and Trends in Mental Retardation** (3) Moss  
*(Formerly Education 324)*  
 Definition, theories, classifications; social, medical, psychological, and educational rehabilitation measures. Emphasis on current contributions of biology, sociology, and psychology to educational theory and practice. Admission by permission of instructor. (Spring—evening)
- 305 **Tests and Measurements for Exceptional Children** (3) Moss  
*(Formerly Education 244)*  
 Materials and methods of psychological, psychometric, and educational tests used in diagnosing and securing information concerning exceptional children. Admission by permission of instructor. (Fall—day; summer 1967)
- 306 **Guidance and Counseling of Exceptional Children** (3) Cornish, Moss  
*(Formerly Education 246)*  
 Educational, mental, social, vocational guidance of exceptional children and youth. Role of teacher in parent counseling. Community agencies involved in postschool rehabilitation, guidance, and recreational service for exceptional children. Admission by permission of instructor. (Fall—evening; summer 1967)



340 **Mental Health of Culturally Deprived and Emotionally Disturbed Children (3)** Van Dyke  
(Formerly Education 313)

Mental health problems affecting the culturally deprived child's vocational, educational, and emotional needs; teacher-child relationships; language differences in socioeconomic environments. (Fall—evening; summer 1967)

341 **Etiology and Treatment of Emotional Disturbance (3)** Staff  
(Formerly Education 314)

Better understanding through psychiatry of causes for and treatment of serious emotional disturbance and social maladjustment. Admission by permission of instructor. (Spring—day; summer 1967)

342 **Seminar: Emotional Disturbance (3)** Van Dyke  
(Formerly Education 315)

Advanced design and administration of programs for emotionally disturbed children in various settings: community factors in program planning, working with multi-disciplinary team, professional ethics and responsibilities, sociocultural considerations of deviancy and normalcy. Admission by permission of instructor. (Spring—evening; summer 1967)

360 **Medical Aspects of Exceptional Children (3)** Staff  
(Formerly Education 327)

Adaptation problems of crippled or other health-impaired children. Causes and treatment of major medical disorders. Planning child's environment to meet his special needs. Gross heart specimen dissection demonstrated. Prerequisite: Special Education 201 and permission of instructor. (Spring—evening; summer 1967)

361 **Neurological Aspects of Exceptional Children (3)** Staff  
(Formerly Education 326)

Medically oriented approach. Etiology of gross disorders of central nervous system and brain such as poliomyelitis, brain injury, aphasia, arthritis, epilepsy, spina bifida, and related conditions. Gross brain specimen dissection demonstrated. Prerequisite: Special Education 201 and permission of instructor. (Fall—evening; summer 1967)

#### FOURTH GROUP

451-52 **Seminar: Special Education (3-3)** Botwin

For doctoral candidates. Individual study based on previous study and experience to attain advanced level of competence and meet identified professional needs or field requirements. (Academic year—as arranged)

453-54 **Doctoral Internship in Special Education (3-3)** Prouty

Supervised internship in college teaching, administration, supervision, or private agency function. Each internship individually arranged. Prerequisite: doctoral candidacy in Special Education or permission of instructor. (Academic year—as arranged)

491 **Dissertation Research (arr.)** Staff

(Fall and spring—as arranged; summer 1967)



## Speech and Drama\*

Professors L.P. Leggette (*Chairman*), C.W. Pettit (*Director of Speech and Hearing Clinic*), G.F. Henigan, Jr. (*Director of Forensics*), E.L. Stevens  
Professorial Lecturers Zelda Fichandler, Gilbert Herer, Zelda Kosh, Edna Monsees

Associate Professors Lee Bielski, J.W. Hillis, L.S. Bowling, Sr.

Associate Professorial Lecturer A.A. Nilles

Assistant Professors K.R. Sanders, Robert Honeygosky, Joan Regnell, David Kieserman

Assistant Professorial Lecturers E.I. Shook, Ruth Cox

Instructors D.A. Gustafson, Janet Beimborn

Lecturers Lois Richards, R.E. Roberts, L.G. Loftus, C.M. Brewer

*Bachelor of Arts with a major in Dramatic Art (Departmental).*—Prerequisite: the Arts and Letters curriculum, page 63, including twelve hours in the basic courses in speech and six hours in English 51–52, 71–72, or 91–92.

Required: the general requirements, see pages 69–73, including the passing of a speech proficiency test early in the program. Speech and Drama 101 and 102, a minimum of nine additional hours in theater arts and nine hours in dramatic literature as approved by the adviser.

*Bachelor of Arts with a major in Speech (Departmental).*—Prerequisite, the Arts and Letters curriculum, page 63, including Speech and Drama 1, 2, 11, 32.

Required: the general requirements, see pages 69–73, including the passing of a speech proficiency test; Speech and Drama 101, 121, 153, 176; and a minimum of twelve additional hours in second-group courses in the speech arts, as approved by the adviser.

American Thought and Civilization 101 *American Civilization* is recommended as a senior-year elective for Speech majors.

*Bachelor of Arts with a major in Speech Pathology and Audiology (Departmental).*—Prerequisite: the Arts and Letters curriculum, page 63, including Speech and Drama 1, 2, 11, 32.

Required: the general requirements, see pages 69–73, including the passing of a speech proficiency test; Speech and Drama 101, 121, 169, 171, and a minimum of twelve additional hours in second-group courses in speech pathology and audiology, as approved by the adviser.

*Master of Arts in the field of Speech Pathology and Audiology.*—Prerequisite: the degree of Bachelor of Arts with a major in Speech Pathology and Audiology from this University, or the equivalent.

Required: the general requirements, pages 77–79.

*Master of Fine Arts in the field of Dramatic Art.*—Prerequisite: the degree of Bachelor of Arts from this University, or the equivalent.

Required: the general requirements, see pages 77–79, twenty-four semester hours of second- and third-group courses in drama and dramatic literature and a creative or research thesis. The program may include six to twelve hours in theater offered at the Arena Stage. For detailed information, consult the Chairman of the Department.

*Bachelor of Arts in Education with a teaching field in Speech and Drama.*—Prerequisite: the Education curriculum, pages 65–66.

Required: the Speech and Drama option and the professional courses listed on pages 96–97.

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



## CLINICAL CERTIFICATION

The Department of Speech and Drama offers preparation for certificates of clinical competence, issued by the American Speech and Hearing Association, in speech pathology and/or audiology. For details consult the Department.

## FIRST GROUP

## A Speech and Hearing Clinic

Pettit, Honeygosky

Individual or group lessons, without academic credit, for such speech difficulties as lisp, cleft palate, articulatory problems, and stuttering. Fee: for individual lessons, \$10; for group lesson, \$5. (Academic year—as arranged; summer 1967)

## B-C American Speech for Foreign Students (3-3)

Bielski

Class limited to foreign-born students. Instruction in the formation of the sounds of spoken English, with emphasis on rhythm and inflection. International Phonetic Alphabet used. Recording fee, \$5 a semester. (Academic year—day and evening)

## 1 Effective Speaking (3)

Staff

Preparation and delivery of extempore speeches, developing confidence and poise, body and voice control; selecting and organizing material. Recording fee, \$2. (Fall and spring—day and evening; summer 1967)

## 2 Persuasive Speaking (3)

Henigan, Sanders

Continuation of Speech and Drama 1, which is prerequisite, emphasis on speech composition and elementary principles of persuasion. (Fall and spring—day)

## 11 Voice and Diction (3)

Leggette and Staff

Developing ease, naturalness, and clarity in the speaking voice. Analysis of individual voices through recordings. Phonetic approach to study of sounds of English, standards of speech. Class instruction in problems of rate, volume, pitch, quality. Recording fee, \$4. (Fall and spring—day and evening; summer 1967)

## 32 Oral Reading (3)

Leggette and Staff

Reading to others, theory and practice in problems of interpreting the printed page. Prerequisite: Speech and Drama 11. Recording fee, \$2. (Fall—day; spring—day and evening; summer 1967)

## SECOND GROUP

## 101 Phonetics (3)

Hillis

Phonetic and phonemic alphabets and their applications to student's own speech improvement and to such fields as theater, public speaking, speech correction, radio, television, and foreign languages. Prerequisite: Speech and Drama 11. Recording fee, \$4. (Fall and spring—day)



- 102 Oral Interpretation of Literature (3)** Leggette  
Theory and practice in problems of communicating meaning and emotion. Selections for study include poetry, prose, and drama. Prerequisite: Speech and Drama 32. Recording fee, \$2. (Spring—day)
- 121 Group Discussion and Conference Leadership (3)** Stevens  
Process of thinking and problem solving in committees and small groups; methods of leading discussions and conferences. Prerequisite: 6 hours of speech or permission of instructor. (Fall—day; spring—evening; summer 1967)
- 126 Public Discussion and Debate (3)** Henigan  
Principles and types of public discussion and debate; practice in argumentative speaking on questions of current interest. Prerequisite: 6 hours of speech or permission of instructor. (Spring—day)
- 127-28 Advanced Debate Practice (1-1)** Henigan  
Admission by permission of instructor, after one semester of satisfactory participation in intercollegiate debate program. May be repeated for total of 4 semester hours. (Academic year—as arranged)
- 133-34 Radio and TV Broadcasting (3-3)** Shook  
Study of the development of radio and TV industries, station organization and management, equipment, production techniques; practice in preparation and performance of radio programs. Recording fee, \$5 a semester. (Academic year—evening)
- 135-36 Radio Workshop (1-1)** Loftus  
Practical work in campus radio station. (Academic year—as arranged)
- 141 Public Speaking: Advanced Forms (3)** Henigan  
Preparation and presentation of speeches for formal occasions with emphasis on the psychology of the audience. Prerequisite: 6 semester hours of speech. (Fall—day)
- 145 Speech Criticism (3)** Henigan  
Rhetorical theory with application to criticism of representative American and British oratory. Admission by permission of instructor. (Not offered 1967-68)
- 151-52 Stagecraft (2-2)** Gustafson  
Theories and practicum in the technical aspects of production. (Academic year—day)
- 153 Acting (3)** Gustafson  
Study and practice in fundamentals of acting technique. Prerequisite: Speech and Drama 32. Laboratory fee, \$5. (Fall—day)
- 154 Play Direction (3)** Kieserman  
Fundamentals of play direction. Under supervision of instructor, students prepare one-act plays for presentation. Prerequisite: Speech and Drama 153. Laboratory fee, \$5. (Spring—day)
- 155-56 Play Production Practice (1-1)** Staff  
Practical work in theater. Prerequisite: Speech and Drama 151. (Academic year—as arranged)



**157 Workshop in Producing Shakespeare (2)**

Participation as an apprentice in minor role or technical work with an Equity Company in the Shakespeare Summer Festival production in the outdoor Sylvan Theatre at the Washington Monument. Hours arranged with Company rehearsals and performances. (Summer 1967)

**165-66 History of the Theater (3-3)**

Gustafson

General survey: Classical, Medieval, Renaissance, later English and Continental, and Modern theater. (Academic year—evening)

**169 Creative Dramatics (3)**

Kieserman

Study of creative dramatics and its use as a learning tool. (Fall—evening)

**170 Children's Theater (3)**

Kieserman

Theory and practice in creating and producing plays for children. (Spring—evening)

**171 Introduction to Speech Pathology and Audiology (3)**

Pettit

Survey of the disorders of speech and hearing, including symptomatology, testing, causation; emphasis on problems encountered by the classroom teacher. (Fall—day)

**172 Speech Pathology I (3)**

Honeygosky, Regnell

Pathologies and therapeutic procedures in articulatory and voice disorders, and cleft palate. Prerequisite: Speech and Drama 171. (Spring—day)

**173 Speech Pathology II (3)**

Honeygosky, Regnell

Pathologies and therapeutic procedures in stuttering and disorders of central or peripheral nervous systems. Prerequisite: Speech and Drama 172. (Fall—day)

**176 Speech, Hearing, and Language Development (3)**

Monsees

Study of normal speech and auditory function from prenatal development through the emergence of language. (Fall—day)

**182 Hearing Problems and Testing of Hearing (3)**

Herer

Overview of the field of audiology to include a review of sound and its properties, anatomy and physiology of auditory system, and methods and procedures of pure tone and speech audiometry, with emphasis on their application to the study of hearing disorders. Demonstration and practice with the pure tone audiometer. (Fall—evening)

**183 Clinical Procedures in Speech and Hearing (1)**

Staff

(Formerly *Clinical Practice in Speech and Hearing*)

Method, theory, and practice in preparation of therapeutic objectives and materials; practice and observation in speech and hearing evaluation. May be repeated for a total of 3 semester hours. Prerequisite: Speech and Drama 172 or 182. (Fall and spring—as arranged)

**184 Clinical Practice in Speech and Hearing (1)**

Staff

Supervised case work in speech and hearing—the University Speech and Hearing Clinic and selected off-campus facilities. May be repeated for a total of 3 semester hours. Prerequisite or concurrent registration: Speech and Drama 183. (Fall and spring—as arranged; summer 1967)



## THIRD GROUP

251-52 **Play Preparation and Presentation** (arr.)

Staff

Observation and participation in theater production: elements of stagecraft and design, principles and techniques of acting, problems in directing plays. May be repeated for a total of 12 semester hours. Admission by audition or interview. (Academic year—as arranged)

258 **Theater Management** (2 to 4)

Staff

Theory and practice in the psychology of handling the public: promotion, box office and house management. Admission by interview. (Fall and spring—as arranged)

277 **Advanced Clinical Procedures in Speech and Hearing** (arr.)  
(Formerly *Advanced Clinical Practice in Speech and Hearing*)

Staff

(Fall and spring—as arranged)

278 **Advanced Clinical Practice in Speech and Hearing** (arr.)

Staff

(Fall and spring—as arranged; summer 1967)

279 **Anatomy and Physiology of Speech and Hearing** (3)

Bowling

Study of structures and pathologies of speech and hearing. Laboratory fee, \$15. (Fall—evening)

280 **Advanced Speech Pathology** (3)

Hillis

Various types of disorders of speech and language; classification, causes, and manifestations. Laboratory fee, \$7.50. (Spring—evening)

281-82 **Clinical Audiology** (3-3)

Herer

Specialized audiometric tests and procedures for the acoustically handicapped. Demonstration and practicum. Laboratory fee, \$7.50 a semester. (First half: fall—day. Second half: spring—evening.)

283 **Community Programs in Speech and Hearing** (3)

Bowling

(Formerly *Community, Industrial, and Military Programs in Audiology and Speech Pathology*)

Methods and procedures for management of hearing and speech programs; review of hearing conservation and monitoring programs and operational aspects of clinical programs designed to meet the needs of individuals with communicative disorders. Laboratory fee, \$7.50. (Not offered 1967-68)

284 **Experimental Phonetics** (3)

Hillis

Consideration of research methodology and published research in the study of speech production and reception. Laboratory fee, \$7.50. (Fall—day)

285 **Language and Speech of the Hearing Handicapped** (3)

Monsees

Review of development of language and speech in normal children. Effects of different types and degrees of hearing impairment on language and speech acquisition. Emphasis on major language development procedures and other habilitation methods for hearing-handicapped children. (Spring—day)



- 286 **Evaluation of Speech and Language Disorders** (3) Honeygosky  
(Formerly *Differential Diagnostics in Speech and Hearing Disorders*)  
Techniques in examination, history taking, patient counseling, and management. Laboratory fee, \$5. (Spring—day)
- 288 **Aural Rehabilitation** (3) Bowling  
Systems, principles, and methodologies of auditory training and speech reading to include development of lesson plans and their application in resolving communication problems of acoustically-handicapped individuals. Laboratory fee, \$7.50. (Spring—day)
- 291 **Seminar: Speech Pathology** (3) Pettit and Staff  
Offered in such areas as articulatory problems and delayed speech, aphasia, voice difficulties and cleft palate, stuttering, cerebral palsy, and allied disorders. May be repeated for credit. (Fall—day; summer 1967)
- 292 **Seminar: Audiology** (3) Staff  
Offered in such areas as theories of audition, special auditory tests, aural rehabilitation, psychoacoustics. May be repeated for credit. (Spring—evening)
- 294 **Independent Research in Dramatic Art** (arr.) Staff  
May be repeated for credit. (Fall and spring—as arranged)
- 295 **Independent Research in Speech and Hearing** (arr.) Staff  
May be repeated for credit. (Fall and spring—as arranged; summer 1967)
- 299–300 **Thesis Research** (3–3) Staff  
(Academic year—as arranged; summer 1967)

### Statistics\*

Professors E.H. Johnson, H.F. Bright, Solomon Kullback (*Chairman*), Murray Brown  
 Professorial Lecturers Samuel Greenhouse, Morton Kupperman, R.P. Isaacs, W.W. Wolman, Harry Rosenblatt  
 Associate Professors H.W. Lilliefors, A.D. Kirsch, R.H. Shumway  
 Assistant Professors R.E. Thomas, C.T. Ireland  
 Assistant Professorial Lecturers Sidney Armore, Selig Starr, M.A. Schwartz, Fred Frishman, R.R.V. Wiederkehr  
 Instructor J.K. Kern  
 Lecturer Bert Levy

*Bachelor of Arts or Bachelor of Science with a major in Mathematical Statistics* (Departmental).—Prerequisite: the Arts and Letters or the Science curriculum, respectively, pages 63–64, including Mathematics 23; Statistics 91.

Required: the general requirements, pages 69–73, including Mathematics 24; Statistics 117, 118, 157–58, 189–90, and six additional hours of second-group Statistics courses selected with the approval of the adviser; a minimum of twenty-four semester hours, including Mathematics 124, 139, 140, and 157 (Mathematics 250 is

\* Staff of Instruction for the academic year 1966–67; Chairman for 1967–68.



recommended), and courses in other departments approved by the adviser as contributing to a well-organized program. For further details, consult the adviser.

*Master of Arts in the field of Mathematical Statistics.*—Prerequisite: a Bachelor's degree with a major in Mathematical Statistics at this University, or the equivalent.

Required: the general requirements, pages 77–79, including Statistics 201–2 or 257–58 and a thesis, Statistics 299–300. The remaining eighteen hours must be selected in consultation with the adviser.

*Master of Science in the field of Applied Statistics.*—Prerequisite: an approved Bachelor's degree. The undergraduate program must include the following courses, or equivalent: Mathematics 24; Statistics 117, 118, 157–58.

Required: the general requirements, pages 77–79, and a thesis, Statistics 299–300. The program consists of at least twelve semester hours of Statistics, and may include appropriate other courses in an area of interest to the candidate, to be selected in consultation with the adviser.

*Doctor of Philosophy fields of study in Statistics: Biometrics, Design of Experiments, Econometrics, Information Theory, Multivariate Analysis, Operations Analysis, Sampling, and Statistical Inference.*—See pages 77–78, 79–80 for requirements for the degree.

*Bachelor of Business Administration with a major in Business and Economic Statistics.*—See pages 112–14, 119.

*Master of Arts in Government in the field of Business and Economic Statistics.*—See pages 121–24, 129–30.

#### FIRST GROUP\*

##### 51 Introduction to Business and Economic Statistics (3)

Lecture (2 hours), laboratory (2 hours). Elementary principles for analyzing and interpreting statistical data; characteristic values; measures of variability, sampling, time series analysis, and simple correlation. Laboratory fee, \$9. (Fall and spring—day and evening; summer 1967)

Staff

##### 52 Mathematics of Finance (3)

Interest and discount, annuities, valuation of stocks and bonds, sinking funds, amortization, valuation of depletable assets, depreciation. —day) (Spring)

Staff

##### 53 Introduction to Statistics in Psychology and Education (3)

Lecture (2 hours), laboratory (2 hours). Averages, dispersion, raw and derived scores, frequency distributions, normal curve, correlation, elementary sampling, introduction to estimation and tests of hypotheses. Laboratory fee, \$9. (Fall—day; spring—day and evening; summer 1967)

Staff

##### †91 Principles of Statistical Methods (3)

Lecture (2 hours), laboratory (2 hours). Variables and attributes, averages and dispersion, frequency distributions and their characteristics, regression and correlation, statistical decision processes. Laboratory fee, \$9. (Fall—day; spring—evening; summer 1967)

Staff

\* Prerequisite: one entrance unit in algebra. Of first-group courses, Statistics 51, 53, and 91 are related in their subject matter, and credit hours for only one of the three may be applied toward a degree. Statistics 52 lies outside of this group, and may be taken for degree credit in combination with any one of the other three.

† Statistics 91 is for Statistics majors, for students in engineering and in the biological and physical sciences.



- 97 **Introduction to Computer Programming (3)** Staff  
Lecture (2 hours), laboratory (2 hours). Computer and programming concepts. High-level language programs written by students will be run on the University computer. Laboratory fee, \$20. (Fall and spring—day; summer 1967)

## SECOND GROUP

- \*104 **Statistics in the Behavioral Sciences and Education I (3)** Kirsch  
Lecture (2 hours), laboratory (2 hours). Introductory study of statistical techniques for research problems in behavioral sciences and education. Laboratory fee, \$9. (Fall—evening; spring—day; summer 1967)
- 105 **Statistics in the Behavioral Sciences and Education II (3)** Kirsch  
Lecture (2 hours), laboratory (2 hours). Advanced study of statistical techniques for research problems. Analysis of variance, correlation techniques, chi-square applications, sampling theory. Prerequisite: Statistics 53 or 104. Laboratory fee, \$9. (Fall—day; spring—evening)
- 106 **Factor Analysis (3)** Kirsch  
Concepts of factor analysis and their utility in various phases of research and related topics. Prerequisite: Statistics 105 or equivalent. Laboratory fee, \$9. (Fall—day)
- 107 **Statistics for Engineers (3)** Staff  
Probability models, discrete and continuous distributions, sampling, hypothesis testing and estimation, engineering applications. Prerequisite: differential and integral calculus. (Fall and spring—evening; summer 1967)
- 109-10 **Quality Control and Reliability Techniques (3-3)** Wolman  
Statistical methods and probability models for quality control and reliability applications. Prerequisite: Statistics 91 or 107. (Academic year—evening)
- 111 **Business and Economic Statistics I (3)** Johnson  
Statistical processes as tools in decision making in areas of economics and business. Prerequisite: Statistics 51 or permission of instructor. (Fall—day and evening)
- 112 **Business and Economic Statistics II (3)** Johnson  
Case work to illustrate quantitative procedures for solution of economic and business problems. Prerequisite: Statistics 111 or equivalent. (Spring—day and evening)
- 113 **Computer Programming (3)** Staff  
Lecture (2 hours), laboratory (2 hours). Computer concepts beyond the introductory level; an introduction to assembly language programming. Prerequisite: Statistics 97. Laboratory fee, \$20. (Spring—day)
- 114 **Introduction to Computer Operating Systems (3)** Staff  
Concepts of software management of computer systems. Prerequisite: Statistics 113. (Fall 1968)

\* May not be taken for credit by students who have received credit for Statistics 51, 53, or 91.



**117 Analysis of Variance (3)**

Staff

Lecture (2 hours), laboratory (2 hours). Introduction to the design of experiments and analysis of variance; random block, factorial, Latin square and Greco-Latin square designs; analysis of covariance. Prerequisite: 3 semester hours selected from Statistics 91, 104, 107. Laboratory fee, \$9. (Fall—day; spring—evening)

**118 Correlation and the Chi-square Test (3)**

Staff

Lecture (2 hours), laboratory (2 hours). Regression and correlation theory: simple, partial, and multiple; contingency-table analysis; tests of goodness of fit. Prerequisite: 3 semester hours selected from Statistics 91, 104, 107. Laboratory fee, \$9. (Fall—evening; spring—day; summer 1967)

**119 Bases of Statistical Decision Making (arr.)**

For students in the Navy Graduate Financial Management Program only. Introduction to techniques of decision making, with emphasis on applications rather than theory. Includes: binomial distribution, normal distribution, Type I and II errors, estimation, research methodology, and problems of inference. (Summer 1967)

**120 Principles of Statistical Analysis (3)**

For students in the Air Force Advanced Management Program only. Introduction to the basic concepts of statistical analysis, measures of central tendency, dispersion, normal distribution, basic statistical inference including estimation and testing hypotheses. (Summer 1967)

**121 Design of Experiments for Behavioral Sciences and Education (3)**

Kirsch

Applications of advanced experimental design to research problems in behavioral sciences and education. Prerequisite: Statistics 105 or 117 and permission of instructor. (Spring—evening)

**122 Forecasting Principles and Techniques (3)**

Johnson

Survey and appraisal of current economic forecasting techniques and indicators of business conditions. Preparation of an actual forecast. Prerequisite: Statistics 51 or equivalent. (Spring—day)

**123 Introduction to Econometrics (3)**

Johnson

Model construction and quantification of economic theory, relevant statistical processes and role of probability. Prerequisite: elementary course in economics and statistics. (Fall—day)

**155 Introduction to Probability (3)**

Staff

Probability distributions, Bayes' theorem and postulate, Bernoulli's theorem and its experimental verification, mathematical expectations, laws of large numbers. Prerequisite: one entrance unit in algebra. (Spring—evening; summer 1967)

**157-58 Introduction to Mathematical Statistics (3-3)**

Staff

Distribution theory, sampling theory, estimation, hypothesis testing, regression analysis, experimental design. Prerequisite: differential and integral calculus. (Academic year—day and evening)



- 161-62 **Information Theory (3-3)** Kullback  
Elementary development of information theory and applications to communication, coding, psychology, linguistics, etc. Prerequisite: 3 semester hours selected from Statistics 107, 155, 157, 189. (Academic year—day)
- 187 **Theory of Sampling (3)** Lilliefors  
Problems of sampling and sample design. Admission by permission of instructor. (Fall—as arranged)
- 188 **Nonparametric Statistical Inference (3)** Lilliefors  
Statistical inference when the form of underlying distribution is unspecified. Admission by permission of instructor. (Spring—as arranged)
- 189-90 **Mathematical Probability and Applications (3-3)** Staff  
Combinatorial analysis, conditional probability, stochastic independence, probability distributions, random variables, laws of large numbers. Prerequisite: differential and integral calculus. (Academic year—day and evening)
- 195 **Reading and Research in Statistics (arr.)** Staff  
May be repeated once for credit. (Fall and spring—as arranged)
- 197 **Digital Computer Programming with Applications (3)** Staff  
Lecture (2 hours), laboratory (2 hours). Use of digital computer in statistical and other computational work. Writing, debugging, and running programs on the digital computer in the University Computing Center. Prerequisite: Statistics 117 and 118, or Mathematics 24, or permission of instructor. Laboratory fee, \$20. (As arranged)

## THIRD GROUP

- 201-2 **Mathematical Statistics (3-3)** Staff  
Distribution theory, sampling theory, estimation, sufficient statistics, hypothesis testing, analysis of variance, multivariate normal distribution. Prerequisite: advanced calculus. (Academic year—evening)
- 207-8 **Operations Analysis (3-3)** Lilliefors  
Basic concepts and techniques. Introduction to simulation, linear programming, game theory, queueing theory, inventory theory, and other topics. Admission by permission of instructor. (Academic year—as arranged)
- 217-18 **Experimental Design (3-3)** Staff  
Advanced theory and application of general linear hypothesis to experimental designs. Admission by permission of instructor. (Academic year—evening)
- 257-58 **Distribution Theory (3-3)** Staff  
(Formerly Advanced Mathematical Statistics)  
Random variables, distribution functions, moments, sequences of random variables, characteristic functions, special distributions, sampling theory, asymptotic distributions. Prerequisite: Statistics 157-58 or 201-2 and Mathematics 124, 139, 140, 157, 250. (Academic year—evening)



**259-60 Advanced Mathematical Probability (3-3)** Staff

Measure theory, probability spaces, random variables, probability distributions, sequences of random variables, conditioning, martingales. Prerequisite: Statistics 189-90 and Mathematics 250. (Academic year—as arranged)

**263-64 Topics in Statistical Inference (3-3)** Staff

Estimation; testing of statistical hypotheses, tests of significance, likelihood ratio, likelihood—odds and odds ratio, Bayesian inference and the use of prior knowledge, decision and information theory. Prerequisite: Statistics 257-58, or Statistics 201-2 and Mathematics 124. (Academic year—evening)

**265-66 Multivariate Analysis (3-3)** Staff

Tests of significance, homogeneity, independence, canonical and vector correlations, multivariate normal distribution, generalized Student's ratio, multivariate linear hypothesis, and analysis of variance. Prerequisite: Statistics 257-58, or Statistics 201-2 and Mathematics 124. (Academic year—evening)

**267-68 Characteristic Functions (3-3)** Staff

Fourier integrals, distribution functions, inversion formulas, limit theorems, applications to the distribution problem of statistics. Prerequisite: Statistics 257-58. (1968-69 and alternate years)

**269 Sequential Analysis (3)** Staff

(Formerly *Sequential Testing*)

Sequential probability ratio test and extensions. Sequential estimation, double sampling, and selection procedures. Optimality properties. Prerequisite: Statistics 257-58. (Fall—as arranged)

**270 Statistical Decision Theory (3)** Staff

Wald's theory of decision functions. Multi-decision problems. Existence theorems, complete class theorems, and other general decision theoretic results. Prerequisite: Statistics 257-58. (Spring—as arranged)

**271-72 Statistical Information Theory (3-3)** Kullback

Basic concepts, definitions, and formulas of information theory; their significance and general properties; inequalities of information theory and sufficiency; applications to statistical problems of discrimination and hypothesis testing. Prerequisite: Statistics 257-58, 259-60. (1968-69 and alternate years: academic year—day)

**273-74 Markov Processes (3-3)** Staff

(Formerly *Stochastic Processes*)

Fundamental notions of Markov chains and processes, generating functions, recurrence, limit theorems, random walks, Poisson processes, birth and death processes, applications. Prerequisite: Statistics 257-58. (1967-68 and alternate years: academic year—evening)

**\*275 Econometrics I: Introduction (3)** Brown, Peskin

Survey of applications and introduction to statistical methods for estimating economic relationships for the economist with some mathematical

\* Interdepartmental course offered by departments of Statistics and Economics. Students register in either department.



facility. Prerequisite: one year of elementary statistics and Economics 203-4 and 205, or equivalent as approved by the instructor. (Fall—evening)

- \*276 **Econometrics II: Theory and Method** (3) Brown, Peskin  
Continuation of Statistics 275; emphasis on errors in variables, confluence, nonspherical disturbances, identification, and multi-equation estimation. Prerequisite: Statistics 275. Recommended: a course in matrix theory. (Spring—evening)
- 279-80 **Differential Games** (3-3) Isaacs  
New theory that can resolve problems of conflict: military, pursuit, and evasion; maneuvering, athletics, and others. Control theory included as special case. Prerequisite: introductory course in ordinary differential equations. (Academic year—evening)
- 281-82 **Time Series Analysis** (3-3) Staff  
Stationary and nonstationary time series, auto and cross correlation, power spectral analysis, multivariate normal processes, mean square estimation and regression, statistical inference, applications. Prerequisite: Statistics 257-58. (1968-69 and alternate years)
- 283 **Advanced Statistical Laboratory** (3) Staff  
Application of the University Computer to complex statistical problems on an individual study basis. Admission by permission of instructor. May be repeated once for credit. (Fall and spring—as arranged)
- 285-86 **Seminar** (3-3) Staff  
Admission by permission of instructor. (Academic year—as arranged)
- 295 **Reading and Research** (3) Staff  
May be repeated once for credit. (Fall and spring—as arranged)
- 297 **Seminar: Problems in Mathematical Statistics** (3) Staff  
(Not offered 1967-68)
- 298 **Seminar: Combinatorial Probability** (3) Ireland  
(Summer 1967)
- 299-300 **Thesis Research** (3-3) Staff  
(Academic year—as arranged)

#### FOURTH GROUP

- \*378 **Seminar: Topics in Econometrics** (3) Brown  
Limited to graduate students, primarily for doctoral candidates; offered as demand requires. Current econometric literature. Prerequisite: Statistics 276.
- 398 **Advanced Reading and Research** (arr.) Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1967)

\* Interdepartmental course offered by departments of Statistics and Economics. Students register in either department.



**399 Dissertation Research (arr.)**

Staff

Limited to Doctor of Philosophy candidates. May be repeated for credit.  
(Fall and spring—as arranged; summer 1967)

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**Urban and Regional Planning**

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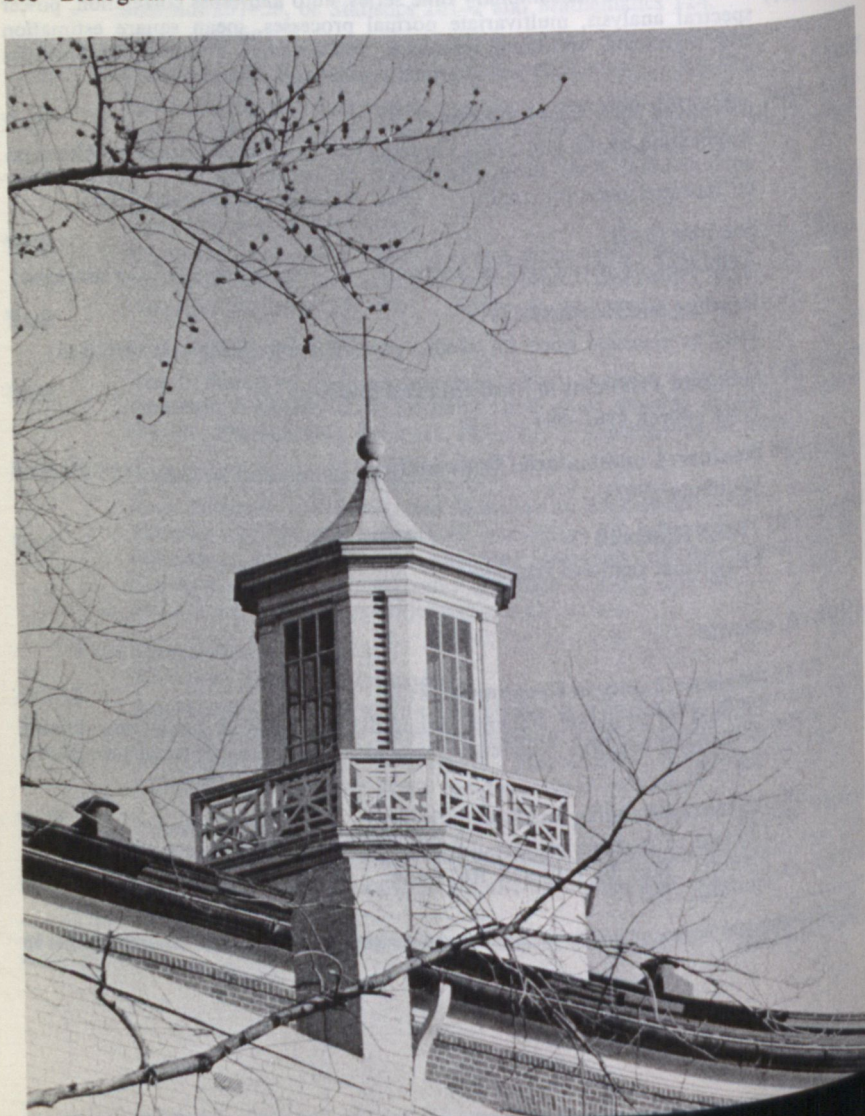
See "Public Administration."

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**Zoology**

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See "Biological Sciences."





## THE UNIVERSITY

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#### TERM ENDING 1968

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Judge Bastian	Mr. Smith
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**COMMITTEE ON ACADEMIC AFFAIRS**

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## COMMITTEE ON UNIVERSITY DEVELOPMENT

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 Joseph Young Ruth, A.B., *Director of Admissions*  
 Ellwood Anthony Smith, B.S. in Ed., *Director of Alumni Relations*  
 Loretta May Stallings, A.M., Ed.D., *Director of Women's Athletics*  
 William Alexander Riddell Walker, A.M., *Adviser to International Students*  
 Donald Winkler, A.B., M.S., *Director of Public Relations*  
 Rupert Woodward, B.S. in L.S., A.M., *Director of Libraries*

## THE COLLEGES, SCHOOLS, AND DIVISIONS

- Calvin Darlington Linton, Ph.D., *Dean of Columbian College of Arts and Sciences*  
 Arthur Edward Burns, Ph.D., *Dean of the Graduate School of Arts and Sciences*

\* The President of the University, the Vice President for Academic Affairs, the Registrar of the University, and the Director of Admissions of the University are ex officio members of all faculties of the colleges and schools of the University.



- John Parks, M.S., M.D., *Dean of the School of Medicine*  
Robert Kramer, A.B., LL.B., *Dean of the National Law Center*  
Martin Alexander Mason, Ing.-Dr., *Dean of the School of Engineering and Applied Science*  
Blake Smith Root, A.M., Ed.D., *Acting Dean of the School of Education*  
James Carlton Dockeray, Ph.D., *Dean of the School of Government and Business Administration*  
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Eugene Ross Magruder, M.B.A., Ph.D., *Dean of the College of General Studies*  
John Gage Allee, Jr., Ph.D., *Dean of the Division of University Students*  
Charles William Cole, Ph.D., *Dean of the Summer Sessions*  
George Martin Koehl, A.M., *Associate Dean of Columbian College of Arts and Sciences*  
Clayton Bernard Ethridge, M.D., *Associate Dean of the School of Medicine, for Postgraduate Education; Medical Director, University Hospital and Clinics*  
Angus MacIvor Griffin, Ph.D., *Associate Dean of the School of Medicine, for Administration and Planning*  
Frank Nelson Miller, Jr., B.S., M.D., *Associate Dean of the School of Medicine, for Student and Curricular Affairs*  
William Wallace Kirkpatrick, A.B., LL.B., *Associate Dean of the National Law Center*  
Ralph Clarke Nash, Jr., A.B., J.D., *Associate Dean of the National Law Center, for Graduate Studies, Research, and Projects*  
Edward Andrew Potts, A.B., LL.B., *Associate Dean of the National Law Center*  
Victor Frederick Ludewig, B.S., *Administrator of the University Hospital and Clinics*  
Joseph Louis Metivier, Jr., A.M., *Assistant Dean of Columbian College of Arts and Sciences*  
Robert Clinton Rutledge, Ph.D., *Assistant Dean of Columbian College of Arts and Sciences*  
William Lewis Turner, Ph.D., *Assistant Dean in Columbian College of Arts and Sciences*  
Robert Edward Baker, A.M., Ed.D., *Assistant Dean of the School of Education*  
Martha Norman Rashid, Ed.B., Ph.D., *Assistant Dean for Grants and Research in the School of Education*  
Edwin Joseph Baughman Lewis, A.B., M.B.A., *Assistant Dean for Special Projects in the School of Government and Business Administration*  
Robert Whittington Eller, B.S., Ed.D., *Assistant Dean (Special Projects) of the College of General Studies*  
George Andrew Olkhovsky, A.M., *Assistant Dean of the Division of University Students*  
Robert Lee Williams, A.M., Ed.D., *Assistant Dean of the Summer Sessions*  
Isabella Frances Young, A.B. in L.S., *Librarian of the Medical Library*  
Hugh Yancey Bernard, A.B., B.S. in L.S., J.D., *Librarian of the Law Library*



### COMMITTEES OF THE UNIVERSITY 1966-67.

#### COMMITTEE ON ACADEMIC POLICY

The Committee on Academic Policy, whose Chairman is the President of the University and whose Vice Chairman is the Vice President for Academic Affairs, is composed of the following members: the deans of the colleges, schools, and divisions; the Chairman of the Executive Committee of the University Senate; the Vice President and Treasurer; the Vice President for Resources; the Vice President for Advanced Policy Studies; the Dean of Students; the Assistant Vice President for Academic Affairs; the Registrar; the Director of Admissions; the Comptroller; the Director of Public Relations; the Dean of Men; the Dean of Women; and the Administrator of the Office of Sponsored Research. The Executive Assistant to the President is an ex officio member of the Committee.

#### COMMITTEE ON RESEARCH

Arthur Edward Burns, *Chairman*  
Robert Edward Baker  
Harold Frederick Bright  
Angus MacIvor Griffin

Nelson Thomas Grisamore  
Herman Hedberg Hobbs  
Robert Wayne Kenny

#### COMMITTEE ON RESEARCH ON HUMANS

Benjamin Douglass Van Evera,  
*Chairman*  
Ira Hubert Cisin  
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Patrick Francis Gallagher  
James William Hillis  
Ralph Kirby White

#### COMMITTEE ON INTERCOLLEGIATE ATHLETICS

Theodore Peter Perros, *Chairman*  
Paul Vernon Bissell  
Richard Bernard Castell

Robert Meldrum Riggs  
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William Lewis Turner  
Carl Hugo Walther

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Arthur Edward Burns, *Chairman*  
Harold Frederick Bright  
Calvin Darlington Linton

William Parkhurst Smith, Jr.  
Lloyd Hartman Elliott, ex officio



## COMMITTEES ON STUDENT AFFAIRS

## COMMITTEE ON STUDENT LIFE

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Paul Vernon Bissell	Carl Oscar McDaniels
William Byron Griffith	Theodore Peter Perros
Virginia Randolph Kirkbride	Six Student Members

## COMMITTEE ON THE PERFORMING ARTS

Charles William Cole, <i>Chairman</i>	Lubin Poe Leggette
Elizabeth Burtner	George Steiner
Philip Henry Highfill, Jr.	Five Student Members
Donald Chenoweth Kline	

## COMMITTEE ON STUDENT PUBLICATIONS

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Hugh Linus LeBlanc	Donald Winkler
James Edwin Swisher	Four Student Members
Douglas Harold Teller	

## COMMITTEE ON RELIGIOUS LIFE

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Donald Richard Janis	Helen Bates Yakobson
Elmer Louis Kayser	Three Student Members
Calvin Weir Pettit	

## THE UNIVERSITY SENATE 1966-67

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Seymour Alpert	*Calvin Darlington Linton
Galip Mehmet Arkilic	*Eugene Ross Magruder
John Withrow Brewer	*Martin Alexander Mason
*Harold Frederick Bright	Charles Rudolph Naeser
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Louis de Pian	John Palmer Reesing, Jr.
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John Andrew Frey	David James Sharpe
Raymond George Hanken	Loretta May Stallings
Robert Bernard Heller	Edwin Lockwood Stevens
*Henry William Herzog	Glen Earl Weston
Frederick Russell Houser	Robert Crumpton Willson
Robert Wayne Kenny	‡Reuben Esselstyn Wood
*Robert Kramer	Artley Joseph Zuchelli

Robert Eugene Park, *Parliamentarian*

\* Ex officio members.

† Sabbatical leave fall semester, Hugh Linus LeBlanc pro tempore.

‡ Chairman of the Executive Committee.



## FACULTY AND STAFF OF INSTRUCTION 1966-67

### Columbian College of Arts and Sciences

### The Graduate School of Arts and Sciences

### The School of Education

### The School of Government and Business Administration

### The School of Public and International Affairs

#### EMERITI

##### Cloyd Heck Marvin, *President Emeritus*

A.B. 1915, A.M. 1916, University of Southern California; A.M. 1917, Ph.D. 1919, Harvard University; LL.D. 1923, University of New Mexico; Ph.D. 1953, Nihon University, Japan; Doctor honoris causa of The George Washington University 1959

##### Antonio Alonso, *Professor Emeritus of Spanish*

A.M. 1922, Indiana University

##### Ruth Harriet Atwell, *Professor Emeritus of Physical Education for Women*

Ph.B. 1918, Denison University; A.M. in Ed. 1933, The George Washington University

##### Gretchen Rogers Bolwell, *Professor Emeritus of German*

A.B. 1930, A.M. 1931, The George Washington University; Ph.D. 1938, Johns Hopkins University

##### Robert Whitney Bolwell, *Professor Emeritus of American Literature*

A.B. 1916, Western Reserve University; A.M. 1917, Ph.D. 1921, Columbia University; Litt.D. 1957, The George Washington University

##### Paul William Bowman, *Professor Emeritus of Biology*

A.B. 1924, University of Pennsylvania; A.M. 1928, The George Washington University; Ph.D. 1930, University of Virginia

##### Elbridge Colby, *Professor Emeritus of Journalism*

A.B. 1912, A.M. 1913, Ph.D. 1922, Columbia University

##### Oswald Symister Colclough, *Professor Emeritus of Law; Dean of Faculties Emeritus; Emeritus Director of the Patent, Trademark, and Copyright Research Institute*

B.S. 1920, U.S. Naval Academy; LL.B. 1935, Sc.D. 1961, The George Washington University; LL.D. 1946, Muhlenberg College

##### Norris Ingersoll Crandall, *Professor Emeritus of Art*

B.Arch. 1914, M.Arch. 1915, Cornell University

##### Alan Thomas Deibert, *Professor Emeritus of Romance Languages*

A.B. 1918, Gettysburg College; A.M. 1922, Harvard University



- William Webster Diehl, *Professor Emeritus of Mycology*  
A.B. 1914, Miami University; M.S. 1915, Iowa State University of Science and Technology;  
Ph.D. 1932, Harvard University
- James Harold Fox, *Professor Emeritus of Education*  
A.B. 1925, A.M. 1926, University of Western Ontario, Canada; Ed.M. 1936, Ed.D. 1937,  
Harvard University
- Thomas Willard Holland, *Professor Emeritus of Labor Economics, in Residence*  
A.B. 1923, University of Michigan; LL.B. 1934, Columbia University; Ph.D. 1939, University  
of Wisconsin
- Averett Howard, *Professor Emeritus of English Composition*  
A.B. 1922, University of California; A.M. 1940, Cornell University
- Arlin Rex Johnson, *Professor Emeritus of Business Administration*  
B.S. 1924, Brigham Young University; A.M. 1931, Ph.D. 1935, The George Washington University
- Francis Edgar Johnston, *Professor Emeritus of Mathematics*  
A.B. 1921, The George Washington University; A.M. 1923, Ph.D. 1926, University of Illinois
- Frances Kirkpatrick, *Professor Emeritus of Home Economics*  
B.S. 1919, University of Missouri; A.M. 1929, Columbia University
- Helen Bennett Lawrence, *Professor Emeritus of Physical Education for Women*  
B.S. in P.E. 1934, A.M. 1938, The George Washington University
- John Russell Mason, *Librarian Emeritus; Curator of Art Emeritus*  
A.B. 1923, A.M. 1925, The George Washington University; M.S. in L.S. 1933, Columbia University
- Florence Marie Mears, *Professor Emeritus of Mathematics*  
A.B. 1917, Goucher College; A.M. 1924, Ph.D. 1927, Cornell University
- William Henry Myers, *Professor Emeritus of Physical Education, Health, and  
Recreation for Men, in Residence*  
A.B. 1931, Occidental College; A.M. in Ed. 1941, The George Washington University
- Fred Everett Nessell, *Registrar Emeritus*  
A.B. 1920, Hiram College
- Richard Norman Owens, *Professor Emeritus of Business Administration*  
A.B., B.S. 1917, University of Missouri; A.M. 1922, Ph.D. 1928, University of Chicago; C.P.A.  
1923, State of Illinois
- Merle Irving Protzman, *Professor Emeritus of Romance Languages*  
A.B. 1918, A.M. 1919, Dickinson College; Ph.D. 1940, Johns Hopkins University
- Myrna Pauline Sedgwick, *Administrative Secretary Emeritus*  
A.B. 1911, Wellesley College
- Edward Henry Sehrt, *Professor Emeritus of German*  
A.B. 1911, Ph.D. 1915, Johns Hopkins University
- Ernest Sewall Shepard, *Professor Emeritus of English Literature*  
A.B. 1925, A.M. 1927, The George Washington University
- Harold Griffith Sutton, *Director of Admissions Emeritus*  
A.B. 1918, Ohio State University; M.S. 1921, Columbia University
- James Henry Taylor, *Professor Emeritus of Mathematics*  
B.S. 1916, University of Nebraska; A.M. 1920, Princeton University; Ph.D. 1924, University  
of Chicago
- Kathryn Mildred Towne, *Professor Emeritus of Home Economics*  
B.S. 1923, Montana State College; A.M. 1930, Columbia University
- Frank Mark Weida, *Professor Emeritus of Statistics*  
B.S. 1913, Kenyon College; Ph.D. 1923, University of Iowa
- Warren Reed West, *Professor Emeritus of Political Science*  
A.B. 1918, The George Washington University; Ph.D. 1922, Johns Hopkins University
- Lawson Edwin Yocum, *Professor Emeritus of Botany*  
B.S. 1916, Pennsylvania State University; M.S. 1920, Ph.D. 1924, State College of Iowa
- Donnell Brooks Young, *Professor Emeritus of Zoology*  
B.S. 1911, Amherst College; Ph.D. 1923, Columbia University



## ACTIVE\*

- Donna Abbey, *Assistant Professor of Physical Education, Health, and Recreation for Women*  
B.S. 1959, Russell Sage College; M.S. 1966, Southern Connecticut State College
- Fred Bernard Abeles, *Assistant Professorial Lecturer in Botany*  
B.S. 1957, Cornell University; Ph.D. 1963, University of Minnesota
- Fred Abrams, *Associate Professor of Spanish*  
A.B. 1955, Queens College; A.M. 1957, Ph.D. 1960, University of Iowa
- Alice Anderson Adams, *Assistant Clinical Professor of Psychology*  
B.F.A. 1948, Ph.D. 1959, University of Oklahoma
- Caroline Lander Adams, *Associate Professor of Botany*  
A.B. 1925, Illinois College; M.S. 1928, University of Chicago; Ph.D. 1932, University of Wisconsin
- Elizabeth Byrne Adams, *Assistant Professor of Business Administration*  
B.S. 1955, Queens College, New York; A.M. in Ed. 1957, The George Washington University
- Martha Diaz De Leon Adem, *Assistant Professor of Spanish*  
A.M. 1952, New York University; Doctor en Letras 1956, Universidad Nacional, Autonoma de Mexico
- Lewis Francis Affronti, *Associate Professor of Microbiology*  
A.B. 1950, A.M. 1951, State University of New York at Buffalo; Ph.D. 1958, Duke University
- Robert Wayne Albers, *Professorial Lecturer on Biochemistry of the Brain*  
B.S. 1950, University of Nebraska; Ph.D. 1954, Washington University
- Samuel Nathan Alexander, *Professorial Lecturer in Business Administration*  
A.B., B.S. 1931, University of Oklahoma; M.S. 1933, Massachusetts Institute of Technology
- Frank Duane Allan, *Associate Professor of Anatomy*  
B.S. 1947, M.S. 1949, University of Utah; Ph.D. 1954, Louisiana State University
- John Gage Allee, Jr., *Professor of English Philology; Dean of the Division of University Students*  
A.B. 1939, A.M. 1940, The George Washington University; Ph.D. 1955, Johns Hopkins University
- George Robert Allen, Jr., *Assistant Professorial Lecturer in Business Administration*  
B.S. 1956, University of Georgia; M.B.A. 1960, Tulane University of Louisiana
- Don Allensworth, *Assistant Professor of Political Science*  
A.B. 1956, Ohio Wesleyan University; M.B.A. 1957, Ohio State University; A.M. 1960, Ph.D. 1964, American University
- William Earl Amos, *Professorial Lecturer in Education*  
B.S. in Ed. 1949, Arkansas State Teachers College; A.M. 1950, University of Tulsa; Ed.M. 1959, Ed.D. 1960, University of Maryland
- Alice Andrews, *Associate Professorial Lecturer in Geography and Regional Science*  
A.B. 1949, University of Georgia; A.M. 1950, Northwestern University
- Avery Delano Andrews II, *Assistant Professor of History*  
A.B. 1950, Harvard University; LL.B. 1953, A.M. 1958, Ph.D. 1962, University of Pennsylvania
- Grover LaMarr Angel, *Professor of Education*  
A.B. 1929, High Point College; A.M. in Ed. 1946, Ed.D. 1952, The George Washington University
- John Lawrence Angel, *Professorial Lecturer in Anatomy and Anthropology*  
A.B. 1936, Ph.D. 1942, Harvard University
- Charlotte Miriam Anker, *Lecturer in Sociology*  
A.B. 1955, Temple University

\* The University Faculty is composed of the President of the University, the Vice President for Academic Affairs, the Director of Admissions, the Registrar, the Director of Libraries, the Treasurer, the Director of Health Services, the Administrator of the Hospital and Clinics, and the membership of the several college and school faculties.



- Daniel Appleman, *Professorial Lecturer in Geology*  
B.S. 1953, California Institute of Technology; A.M. 1954, Ph.D. 1956, Johns Hopkins University
- Edmund Minor Archer, *Studio Lecturer in Art (Painting)*
- Sidney Armore, *Assistant Professorial Lecturer in Statistics*  
A.B. 1937, Brooklyn College
- Joseph Aschheim, *Professor of Economics*  
A.B. 1951, University of California; A.M. 1953, Ph.D. 1954, Harvard University
- John Littleton Boone Atkinson, *Professor of International Affairs; Director, Air University Center, Maxwell Air Force Base, Alabama*  
A.B. 1939, A.M. 1941, Louisiana State University; Ph.D. 1951, University of Pennsylvania
- Daniel Millen Atwood, *Lecturer in English*  
A.B. 1961, University of Wisconsin
- James Stephen Aven, *Associate Research Professor of Education*  
A.B. 1949, A.M. 1952, Ed.D. 1962, University of California at Los Angeles
- Joseph Baclawski, *Professorial Lecturer in International Affairs*  
A.B. 1947, A.M. 1948, Ph.D. 1951, University of Michigan
- John Martyn Bailey, *Associate Professor of Biochemistry*  
B.S. 1949, Ph.D. 1952, University of Wales
- Jeffrey John Wheeler Baker, *Visiting Associate Professor of Biology*  
A.B. 1953, M.S. 1959, University of Virginia
- Robert Edward Baker, *Associate Professor of Education; Assistant Dean of the School of Education; Director, Special Program in Elementary Teacher Education*  
B.S. in Ed. 1939, State University of New York at Buffalo; A.M. 1954, Catholic University of America; A.M. in Ed. 1956, Ed.D. 1962, The George Washington University
- Simon Baker, *Professorial Lecturer in Geography and Regional Science*  
B.S. 1951, A.M. 1952, University of Arizona; Ph.D. 1965, Clark University
- Arthur Sparrow Banks, *Assistant Research Professor of Political Science*  
A.B. 1951, Cornell University; A.M. 1954, The George Washington University
- Ruth Lillian Aaronson Bari, *Assistant Professor of Mathematics*  
A.B. 1939, Brooklyn College; A.M. 1943, Ph.D. 1966, Johns Hopkins University
- Richard Adrian Barrett, *Assistant Professor of Business Administration; Director, Air Force Advanced Management Program*  
A.B. 1930, Amherst College; M.B.A. 1932, Harvard University
- David George Barry, *Visiting Professor of Biology*  
A.B. 1947, State College of Iowa; M.S. 1948, Ph.D. 1952, University of Iowa
- Bette Lee Barton, *Assistant Professor of Chemistry*  
A.B. 1958, Rutgers, the State University; A.M. 1959, Ph.D. 1963, Columbia University
- Jay Barton II, *Visiting Professor of Biology*  
A.B. 1947, A.M. 1948, Ph.D. 1951, University of Missouri
- Katharine Pease Beardsley, *Associate Clinical Professor of Psychology*  
B.S. 1932, Beloit College; A.M. 1933, Smith College; Ph.D. 1949, Columbia University
- Norman Beckman, *Associate Professorial Lecturer in Public Administration*  
A.B. 1949, Brooklyn College; A.M. 1952, Syracuse University; Ph.D. 1957, Columbia University
- David Booth Beers, *Lecturer in Greek*  
A.B. 1957, Trinity College; A.M., LL.B. 1960, University of California
- \*Janet Miller Beimbom, *Instructor in Speech*  
A.B. 1962, San Diego State College; M.S. 1963, University of Wisconsin
- Blaine Richard Berg, *Assistant Professorial Lecturer in Journalism*  
A.B. 1954, Fresno State College; M.S. 1957, Boston University
- Fred Bergmann, *Professorial Lecturer in Biochemical Genetics*  
B.S. 1950, M.S. 1951, Massachusetts Institute of Technology; Ph.D. 1957, University of Wisconsin

\* On leave of absence spring semester 1967.



\*Otto Bergmann, *Associate Professor of Physics*

Ph.D. 1949, University of Vienna, Austria

Dorothy Marshall Betz, *Instructor in French*

A.B. 1961, The George Washington University; A.M. 1963, Cornell University

Lee Sheward Bielski, *Associate Professor of Speech*

B.S. 1940, Ohio University; A.M. 1944, University of Michigan

Sven Petter Bjorklund, *Assistant Professorial Lecturer in Physics*

M.S. 1951, University of Helsinki, Finland; Ph.D. 1966, Stevens Institute of Technology

Lydia Ann Burman Blanchard, *Instructor in English*

B.S. 1957, M.S. 1958, Northwestern University

Ethel Joan Blanchette, *Assistant Professor of Anatomy*

B.S. 1956, Queens College, New York; M.S. 1959, New York University; Ph.D. 1965, Columbia University

Herbert Block, *Professorial Lecturer in International Affairs, Institute for Sino-Soviet Studies*

Ph.D. 1926, University of Freiburg, Germany

Joseph Blum, *Professorial Lecturer in Mathematics*

B.S. 1940, City College, New York; A.M. 1948, Ph.D. 1958, The George Washington University

Joe Morris Blumberg, *Clinical Professor of Pathology*

B.S. 1930, M.D. 1933, Emory University

Edgar Boling, Jr., *Lecturer in English*

A.B. 1953, A.M. 1955, Emory University

Roland Richard Bonato, *Assistant Research Professor of Psychology*

A.B. 1954, Western Reserve University; A.M. 1957, Ph.D. 1961, University of Connecticut

Robert John Bond, *Assistant Professorial Lecturer in Business Administration*

A.B. 1924, Boston College

John Gordon Boswell, *Assistant Professor of Education*

A.B. in Ed. 1953, A.M. in Ed. 1956, Ed.D. 1963, The George Washington University

Perry Botwin, *Professor of Special Education*

B.S. 1942, Rutgers, the State University; A.M. 1947, New York University; Ed.D. 1957, Columbia University

Lloyd Spencer Bowling, Sr., *Associate Professor of Speech and Hearing*

A.B. 1954, A.M. 1957, Ed.D. 1964, University of Maryland

Thomas Elliot Bowman, *Adjunct Lecturer in Biological Sciences*

B.S. 1941, Harvard University; A.M. 1948, University of California; Ph.D. 1954, University of California at Los Angeles

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B.S. 1956, Carnegie Institute of Technology; M.E.A. 1959, The George Washington University; D.B.A. 1963, Harvard University

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B.S. in B.A. 1942, Millikin University; Ph.D. 1948, University of Illinois

Roscoe Brady, Jr., *Professorial Lecturer on Biochemistry of the Brain*

M.D. 1947, Harvard University

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B.S. 1948, City College, New York; Ph.D. 1956, University of California at Los Angeles

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A.B. 1949, M.D. 1952, The George Washington University

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B.S. in Ed. 1934, Johns Hopkins University; A.M. 1949, American University; Ed.D. 1962, The George Washington University

Alexander Breslow, *Associate Professor of Pathology*

B.S. 1948, M.S., M.D. 1953, University of Chicago

\* On sabbatical leave spring semester 1967.



- C. Madison Brewer, *Lecturer in Speech and Drama*  
A.B. 1964, Pennsylvania State University
- John Withrow Brewer, *Professor of International Law*  
A.B. 1926, A.M. 1930, Ph.D. 1932, Princeton University
- Michael Brewer, *Professor of Economics*  
B.S. 1953, Yale University; M.S. 1955, University of Michigan; Ph.D. 1959, University of California
- Harold Frederick Bright, *Professor of Statistics; Vice President for Academic Affairs*  
A.B. 1937, Lake Forest College; M.S. 1944, University of Rochester; Ph.D. 1952, University of Texas
- Clifford John Brinkman, *Assistant Professorial Lecturer in Business Administration*  
A.B. 1934, The George Washington University
- A.D. Britt, *Assistant Professor of Chemistry*  
B.S. 1957, West Texas State University; A.M. 1961, Ph.D. 1963, Washington University
- John Caruthers Broderick, *Adjunct Professor of English*  
A.B. 1948, Southwestern at Memphis; A.M. 1949, Ph.D. 1953, University of North Carolina
- Bernard Beryl Brodie, *Professorial Lecturer in Pharmacology*  
B.S. 1931, McGill University, Canada; Ph.D. 1935, New York University
- Elna Riker Broffman, *Lecturer in English*  
A.B. 1951, Beaver College; A.M. 1953, Columbia University
- Diana Paul Bronte, *Instructor in French*  
A.B. 1960, Hendrix College
- Elizabeth Broomhead, *Associate Clinical Professor of Psychology*  
A.B. 1930, Mount Holyoke College; A.M. 1932, Columbia University
- David Springer Brown, *Professor of Public Administration*  
A.B. 1936, University of Maine; Ph.D. 1955, Syracuse University
- Murray Brown, *Professor of Econometrics*  
A.B. 1952, State University of New York at Buffalo; Ph.D. 1956, New School for Social Research
- Raymond Nathan Brown, *Assistant Clinical Professor of Anatomy*  
M.D. 1943, The George Washington University
- Robert Ben Brown, *Associate Professorial Lecturer in Accounting*  
B.S. 1932, Oregon State University
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A.B. 1949, University of Rhode Island; A.M. 1951, Ph.D. 1960, University of North Carolina
- Stephen Jeffry Brown, *Associate Professor of English Literature*  
A.B. 1950, A.M. 1954, Ph.D. 1959, Yale University; A.B. 1952, Cambridge University, England
- John Robert Buchheit, *Associate Professorial Lecturer in Zoology*  
B.S. 1929, Hamline University; M.S. 1932, University of Illinois
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A.B. in Govt. 1944, A.M. in Govt. 1950, The George Washington University
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B.F.A. 1942, Carnegie Institute of Technology; A.M. 1962, Emory University
- James Franklin Burks, *Associate Professor of French*  
A.B. 1951, A.M. 1952, University of Cincinnati; Ph.D. 1957, Indiana University
- Arthur Edward Burns, *Professor of Economics; Dean of the Graduate School of Arts and Sciences*  
A.B. 1931, A.M. 1934, University of California; Ph.D. 1935, The George Washington University
- Thomas Burns, *Assistant Professor of Sociology*  
B.S. 1959, A.M. 1963, Stanford University

\* On leave of absence spring semester 1967.



- William Wesley Burr, Jr., *Professorial Lecturer on Isotopes*  
A.B. 1947, University of Nebraska; M.S. 1948, Ph.D. 1951, University of Illinois; M.D. 1960, University of Texas
- Elizabeth Burtner, *Professor of Physical Education, Health, and Recreation for Women*  
A.B. 1927, Hood College; A.M. 1935, Columbia University
- Paul Calabrisi, *Professor of Anatomy*  
A.B. 1931, Catholic University of America; A.M. 1940, The George Washington University; Ph.D. (Cantab.) 1955, Cambridge University, England
- Willard Edmund Caldwell, *Professor of Psychology*  
A.B. 1940, A.M. 1941, University of Florida; Ph.D. 1946, Cornell University
- Eloise Owens Calkins, *Assistant Professor of Education*  
A.B. in Ed. 1957, A.M. in Ed. 1961, The George Washington University
- Elwood Wilbur Camp, *Associate Professor of Hospital Administration*  
A.B. 1934, M.S. in S.W. 1941, University of Nebraska; M.H.A. 1955, Baylor University
- Colin MacLennan Campbell, *Associate Professorial Lecturer in Business Administration*  
A.B. 1944, Norwich University; LL.B. 1950, University of Virginia; C.L.U. 1957, American College of Life Underwriters
- Edward Alan Caress, *Assistant Professor of Chemistry*  
A.B. 1958, Dartmouth College; Ph.D. 1963, University of Rochester
- James Harrison Hewes Carrington, *Assistant Professorial Lecturer in Business Administration*  
B.S. 1948, U.S. Naval Academy; M.B.A. 1964, The George Washington University
- Gerald Vincent Carroll, *Professor of Geology*  
A.B. 1943, Lehigh University; Ph.D. 1952, Yale University
- Thomas Frank Carroll, *Visiting Professor of Economics*  
A.B. 1942, Western Reserve University; M.S. 1947, Ph.D. 1950, Cornell University
- Wesley Thomas Carroll, *Professor of Education*  
B.S. 1933, Iowa State University of Science and Technology; A.M. 1940, Ph.D. 1952, University of Nebraska
- Joan Caryl, *Studio Lecturer in Art (Design)*
- Marie Mullaney Cassidy, *Assistant Professor of Physiology*  
B.S. (General) 1957, B.S. (Special) 1958, M.S. 1959, Ph.D. 1962, National University of Ireland
- Henry Marcellus Cathey, *Associate Professorial Lecturer on Plant Physiology*  
B.S. 1950, North Carolina State University at Raleigh; M.S. 1952, Ph.D. 1955, Cornell University
- Joan Patricia Caton, *Instructor in English*  
A.B. 1961, Marquette University; A.M. 1963, Northwestern University
- George Chacko, *Assistant Professorial Lecturer in Political Science*  
A.M. 1950, Madras University, India; B.Com. 1952, Calcutta University, India; Ph.D. 1959, New School for Social Research
- William Weymouth Chase, *Professorial Lecturer in Education*  
A.B. 1948, A.M. 1949, Colorado State College; Ed.D. 1956, Indiana University
- James Robert Child, *Assistant Professorial Lecturer in Russian*  
A.B. 1949, Princeton University; A.M. 1950, University of Pennsylvania
- Tushar Kumar Chowdhury, *Assistant Professor of Physiology*  
B.S. 1956, University of Calcutta, India; M.S. 1961, Montana State University; Ph.D. 1965, State University of New York at Buffalo
- John Bert Christensen, *Associate Professor of Anatomy*  
A.B. 1954, Brigham Young University; M.S. 1955, Ph.D. 1958, University of Oklahoma
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B.S. 1949, M.S. 1950, Ph.D. 1958, University of Maryland



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A.B. 1942, West Virginia University; D.D.S. 1944, University of Maryland; M.S. 1951, Ph.D. 1959, The George Washington University
- Esat Ozcan Cirpili, *Visiting Assistant Professor of Physiology*  
M.D. 1958, Specialist in Physiology 1963, University of Istanbul
- Ira Hubert Cisin, *Professor of Sociology*  
B.S. 1939, New York University; A.M. 1951, Ph.D. 1957, American University
- Astere Evarist Claeysens, Jr., *Associate Professor of English*  
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B.S. 1959, East Carolina College; M.S. 1961, Ohio University
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B.S. in E.E. 1953, M.S. 1957, Purdue University
- Ronald Grey Clark, *Assistant Professorial Lecturer in Anatomy and Biology*  
A.B. 1960, Johns Hopkins University; M.S. 1963, Ph.D. 1966, The George Washington University
- Carl William Clewlow, *Professorial Lecturer in Business Administration*  
A.B. in Govt. 1949, A.M. in Govt. 1951, The George Washington University
- Eleanor Clough, *Assistant Professorial Lecturer in Classics*  
A.B. 1941, Radcliffe College; A.M. 1964, Catholic University of America
- Daniel Raymond Cloutier, *Associate Professor of Public Administration*  
A.B. 1949, Bates College; M.P.A. 1951, University of Michigan; Ph.D. 1961, University of Alabama
- William Graham Clubb, *Professor of French*  
A.B. 1947, University of Kansas; A.M. 1950, Ph.D. 1955, Princeton University
- Anthony George Coates, *Associate Professor of Geology*  
B.S. 1959, Ph.D. 1963, University of London, England
- James Harold Coberly, *Professor of American Literature*  
A.B. 1933, A.M. 1938, Ph.D. 1949, The George Washington University
- Mary Ann Bieter Coffland, *Assistant Professor of Romance Languages*  
A.B. 1952, College of St. Catherine; A.M. 1957, Ph.D. 1965, University of Minnesota
- Eugene Abraham Cogan, *Associate Professorial Lecturer in Psychology*  
A.B. 1947, A.M. 1949, Ph.D. 1951, University of California at Los Angeles
- Stanley Lee Cohen, *Lecturer in Psychology*  
A.B. 1963, A.M. 1966, The George Washington University
- Victor Hugo Cohn, Jr., *Associate Professor of Pharmacology*  
B.S. 1952, Lehigh University; A.M. 1954, Harvard University; Ph.D. 1961, The George Washington University
- Charles William Cole, *Professor of American Literature; Dean of the Summer Sessions*  
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B.S. 1947, Madison College; A.M. in Ed. 1950, The George Washington University
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B.S. in P.E. 1949, The George Washington University
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B.S. 1958, Tufts University
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A.B. 1963, A.M. 1964, University of Missouri
- Leonard Cornelius Collins, *Professorial Lecturer in Business Administration*  
A.B. 1943, Boston College; LL.B. 1946, Catholic University of America; LL.M. 1953, Georgetown University



- William John Condell, Jr., *Associate Professorial Lecturer in Physics*  
B.Ch.E. 1949, M.S. 1951, Ph.D. 1959, Catholic University of America
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B.S. 1929, U.S. Military Academy; M.B.A. 1938, Harvard University
- Charles Barrie Cook, *Assistant Clinical Professor of Pathology*  
B.S. 1945, Hampden-Sydney College; M.D. 1948, The George Washington University
- Howard Lee Coppenbarger, *Associate Professorial Lecturer in Journalism*
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Diplom Dolmetscher 1955, University of Mainz, Germany; A.M. 1957, University of Florida
- Timothy Corkery, *Studio Lecturer in Art (Painting)*  
B.F.A. 1943, School of the Art Institute of Chicago
- Bertice Andrews Cornish, *Professorial Lecturer in Special Education*  
B.S. 1954, A.M. 1955, Ed.D. 1962, Columbia University
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B.S. 1955, State University of New York at Albany; M.S. 1959, Ph.D. 1967, Syracuse University
- John Walker Coughlan, *Professor of Accounting*  
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- Catherine Nebolsine Coulter, *Assistant Professorial Lecturer in Slavic and Oriental Languages and Literatures*  
A.B. 1957, Barnard College
- Thomas Francis Courtless, Jr., *Assistant Professor of Law and Sociology*  
A.B. 1955, Pennsylvania State University; A.M. 1960, Ph.D. 1966, University of Maryland
- Ruth O'Dell Cox, *Assistant Professorial Lecturer in Speech*  
B.S. 1936, Syracuse University; A.M. 1962, The George Washington University
- Milton Crane, *Professor of English Literature*  
A.B. 1937, A.M. 1938, Columbia University; A.M. 1941, Ph.D. 1942, Harvard University
- Roger Frank Cressey, *Adjunct Lecturer in Biological Sciences*  
A.B. 1956, A.M. 1958, Ph.D. 1965, Boston University
- William Henry Crocker, *Associate Professorial Lecturer in Anthropology*  
A.B. 1950, Yale University; A.M. 1953, Stanford University; Ph.D. 1962, University of Wisconsin
- Margaret Crumbaugh, *Lecturer in English*  
A.M. 1947, Catholic University of America
- Beverly Anderson Crump, *Associate Professorial Lecturer in Education*  
B.S. 1948, St. Cloud State College; Ed.M. 1950, University of Minnesota
- John Thomas Dailey, *Research Professor of Education*  
B.S. 1936, Southwest Texas State College; M.S. 1939, North Texas State University; Ph.D. 1949, University of Texas
- James Edward Daly, Jr., *Assistant Professorial Lecturer in Business Administration*  
Ed.B. 1957, Rhode Island College
- Marjorie Catlin Daly, *Assistant Professorial Lecturer in Education*  
A.B. 1938, Wichita State University; M.Mus.Ed. 1947, Northwestern University
- Clarence Henry Danhof, *Professor of Economics*  
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- Richard LaVern Davis, *Clinical Instructor in Pathology*  
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- Clarke Davison, *Professor of Pharmacology*  
B.S. 1948, M.S. 1949, The George Washington University; Ph.D. 1954, Harvard University
- Roderic Hollett Davison, *Professor of European History*  
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- Vincent James DeAngelis, *Professor of Physical Education, Health, and Recreation for Men*  
B.S. in P.E. 1939, A.M. in Ed. 1948, The George Washington University
- Janet Marie Dearcopp, *Instructor in Physical Education, Health, and Recreation for Women*  
B.S. in Ed. 1964, Maryville College
- Clyde George Dease, *Instructor in Physics*  
B.S. 1961, Purdue University; M.S. 1962, University of Michigan
- Evelyn Lohoefer DeBoeck, *Associate Professorial Lecturer in Physical Education, Health, and Recreation for Women*  
B.S. 1942, University of North Carolina at Greensboro
- Ira Washington Deep, *Visiting Associate Professor of Biology*  
A.B. 1950, Miami University; M.S. 1952, University of Tennessee; Ph.D. 1956, Oregon State College
- Harold Charles Demoady, *Associate Professor of Business Administration*  
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- Frank Landt Dennis, *Associate Professorial Lecturer in Journalism*  
A.B. 1929, University of Oklahoma; LL.B. 1935, Harvard University
- Linda Grant DePauw, *Assistant Professor of American History*  
A.B. 1961, Swarthmore College; Ph.D. 1964, Johns Hopkins University
- Alton Harold Desmond, *Professor of Zoology*  
B.S. 1949, Hartwick College; M.S. 1951, Ph.D. 1954, Brown University
- Harry Grubb Detwiler, *Professor of Education*  
B.S. 1936, West Chester State College; A.M. in Ed. 1952, Ed.D. 1961, The George Washington University
- Jessie Calver Dickens, *Lecturer in Biological Sciences*  
A.B. 1939, The George Washington University
- Michael Morgan Dietch, Jr., *Lecturer in Business Administration*  
M.B.A. 1962, Harvard University
- James Jackson Dillinger, *Studio Lecturer in Art (Drawing)*  
A.B. 1964, A.M. 1966, University of Maryland
- Joseph Amedeo Di Paolo, *Associate Professorial Lecturer in Anatomy*  
A.B. 1948, Wesleyan University; M.S. 1949, Western Reserve University; Ph.D. 1951, Northwestern University
- Oscar Charles Disler, *Associate Professorial Lecturer in Accounting*  
A.B. in Govt. 1945, A.M. in Govt. 1958, The George Washington University
- James Carlton Dockeray, *Professor of Finance; Dean of the School of Government and Business Administration*  
A.B. 1929, Ohio Wesleyan University; A.M. 1931, Ph.D. 1936, Ohio State University
- Paul Dolan, *Professorial Lecturer in Political Science*  
B.S. 1933, A.M. 1936, University of Pennsylvania; Ph.D. 1949, Johns Hopkins University
- Andrea Doman, *Assistant Clinical Professor of Psychology*  
Ph.D. 1940, Pazmany University, Hungary; Ph.D. 1961, Catholic University of Louvain, Belgium
- Dennis Doolin, *Visiting Associate Professor of International Affairs*  
B.S. 1958, University of San Francisco; A.M. 1960, Ph.D. 1964, Stanford University
- Jesse Frank Doubleday, *Associate Professorial Lecturer in Business Administration*  
B.S. 1954, University of Maryland; A.M. 1955, The George Washington University
- Donald Sterling Douglas, *Associate Professor of Zoology*  
A.B. 1957, Oberlin College; Ph.D. 1963, Duke University
- Thomas Downing, *Studio Lecturer in Art (Painting)*  
A.B. 1948, Randolph-Macon College
- Daniel Maccabaeus Dribin, *Professorial Lecturer in Mathematics*  
B.S. 1933, M.S. 1934, Ph.D. 1936, University of Chicago



- Barbara Joan Dunham, *Instructor in English Composition*  
A.B. 1961, The George Washington University; A.M. 1963, Mills College
- William Rankin Duryee, *Research Professor of Experimental Pathology*  
A.B. 1927, Ph.D. 1933, Yale University
- Hazel Mary Eagle, *Lecturer in English*  
A.M. 1955, Cambridge University, England
- \*Roy Brandon Eastin, *Professor of Business Administration*  
A.B. 1943, A.M. 1945, The George Washington University; Ph.D. 1953, American University
- Donald Miller Ehat, *Assistant Professorial Lecturer in Education*  
B.S. 1956, State University of New York; M.R.E. 1960, Fuller Theological Seminary
- Jack Edward Eisen, *Associate Professorial Lecturer in Journalism*  
A.B. 1951, Antioch College
- Julian Eisenstein, *Professor of Physics*  
B.S. 1941, A.M. 1942, Ph.D. 1948, Harvard University
- Robert Whittington Eller, *Associate Professor of Education*  
B.S. 1951, D.C. Teachers College; A.M. in Ed. 1953, Ed.D. 1963, The George Washington University
- Charles Fox Elliott, *Assistant Professor of Political Science and International Affairs*  
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- John Neil Ellison, *Assistant Professorial Lecturer in Economics*  
B.S. 1953, M.S. 1960, Virginia Polytechnic Institute
- Carl-Eric Elwin, *Assistant Professorial Lecturer in Physiology*  
M.B. 1953, M.D. 1958, Kungliga Karolinska Mediko-Kirurgiska Institutet, Sweden
- Artemis Emmanuel, *Associate Professorial Lecturer in Sociology*  
A.B. 1947, American University, Cairo, Egypt; A.M. 1956, Columbia University
- †Norma Joyce Engberg, *Instructor in English Composition*  
A.B. 1961, The George Washington University; A.M. 1963, University of Florida
- Norma Jean Enochs, *Visiting Assistant Professor of Biology*  
A.B. 1961, David Lipscomb College; M.S. 1963, Ph.D. 1966, Purdue University
- William Francis Enos, *Assistant Clinical Professor of Pathology*  
A.B. 1942, Dartmouth College; M.D. 1945, State University of New York, Downstate Medical Center
- Charles Joseph Epstein, *Professorial Lecturer on Inherited Metabolic Disease*  
A.B. 1955, M.D. 1959, Harvard University
- ‡Richard Ferdinand Ericson, *Professor of Business Administration*  
A.B. 1943, M.B.A. 1948, University of Chicago; Ph.D. 1952, Indiana University
- Garret Jay Etgen, *Assistant Professorial Lecturer in Mathematics*  
B.S. 1959, College of William and Mary; M.S. 1961, University of Wisconsin; Ph.D. 1964, University of North Carolina
- Grace Elizabeth Orvis Evans, *Professorial Lecturer in Art*  
A.B. 1943, A.M. 1946, University of Minnesota
- Mohammad Fatemi, *Instructor in Physics*  
B.S. 1962, M.S. 1965, The George Washington University
- Mead Mather Feick, *Lecturer in English*  
A.B. 1959, Haverford College
- Gerald Mervin Fenichel, *Special Lecturer in Special Education*  
A.B. 1955, Johns Hopkins University; M.D. 1959, Yale University
- Zelda Diamond Fichandler, *Professorial Lecturer in Drama*  
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\* On sabbatical leave 1966-67.

† On leave of absence spring semester 1967.

‡ On sabbatical leave spring semester 1967.



- Barry Charles Field, *Assistant Professor of Economics*  
B.S. 1956, M.S. 1959, Cornell University
- Robert Michael Field, *Associate Professorial Lecturer in Economics*  
A.B. 1950, A.M. 1957, Ph.D. 1966, Harvard University
- Nicolae Filipescu, *Associate Professor of Chemistry*  
Ph.D. 1957, University of Industrial Chemistry, Polytechnical Institute, Rumania; Ph.D. 1964, The George Washington University
- Milenko Filipovitch-Nikatch, *Assistant Professorial Lecturer in Russian*  
M.S. 1930, Federal Polytechnical Institute, Switzerland
- \*John Lincoln Finan, *Professor of Psychology*  
A.B. 1933, Harvard University; A.M. 1934, Duke University; Ph.D. 1937, Yale University
- Lester Walter Fix, *Assistant Clinical Professor of Pathology*  
M.D. 1943, State University of New York at Buffalo
- Roland Fleischer, *Associate Professor of Art*  
A.B. 1952, Western Maryland College; A.M. 1954, Ph.D. 1964, Johns Hopkins University
- Sidney Forrest, *Studio Lecturer in Applied Music (Clarinet)*  
A.B. 1939, University of Miami; A.M. 1941, Columbia University
- Richard Foster, *Assistant Professorial Lecturer in Health Care Administration*  
A.B. 1950, Ohio Wesleyan University; M.H.A. 1955, University of Minnesota
- Robert Foster, *Studio Lecturer in Art (Calligraphy and Lettering)*  
B.S. 1917, Pennsylvania State University
- John Andrew Frey, *Associate Professor of Romance Languages*  
A.B. 1951, A.M. 1952, University of Cincinnati; Ph.D. 1957, Catholic University of America
- Fred Frishman, *Assistant Professorial Lecturer in Statistics*  
A.B. 1956, A.M. 1957, The George Washington University
- Helmuth Fuchs, *Visiting Associate Professor of Anthropology*  
D.Phil. 1956, University of Vienna, Austria
- James Louis Gabriel, *Instructor in English*  
A.B. 1958, Catholic University of America; A.M. 1963, The George Washington University
- Charles Edward Galbreath, *Professor of International Economics*  
A.B. 1931, Colgate University; A.M. 1932, Ph.D. 1941, Cornell University
- Matthew Gallagher, *Professorial Lecturer in International Affairs*  
Ph.B. 1941, Providence College; A.M. 1948, Ph.D. 1960, Harvard University
- Michael Graham Gallagher, *Assistant Professor of Accounting*  
A.B. in Govt. 1960, LL.B. 1964, The George Washington University; C.P.A. 1964, State of Virginia
- Patrick Francis Gallagher, *Associate Professor of Anthropology*  
A.B. 1957, University of Pittsburgh; Ph.D. 1964, Yale University
- Robert Norton Ganz, Jr., *Associate Professor of American Literature*  
A.B. 1949, A.M. 1951, Ph.D. 1959, Harvard University
- Blanche Hatfield Gardner, *Lecturer in German*  
A.B. 1940, Mount Holyoke College; A.M. 1942, University of Wisconsin
- Floris Garner, *Assistant Clinical Professor of Pathology (Comparative Pathology)*  
B.S. 1948, D.V.M. 1950, Washington State University
- Raymond Leonard Garthoff, *Professorial Lecturer in International Affairs, Institute for Sino-Soviet Studies*  
A.B. 1948, Princeton University; A.M. 1949, Ph.D. 1951, Yale University
- Harry Irving Gates, *Instructor in Art*  
B.F.A. 1958, M.F.A. 1960, University of Illinois
- James David Gates, *Assistant Professorial Lecturer in Education*  
A.B. 1951, Hiram College; A.M. 1956, Columbia University

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- Aladino Gavazzi, *Assistant Professorial Lecturer in Health Care Administration*  
B.S. 1953, M.S. 1955, Columbia University
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B.S. in P.E. 1948, A.M. in Ed. 1952, A.P.C. 1961, The George Washington University
- Frederick Harrell Gibbs, *Professor of Hospital Administration*  
B.S. 1958, University of Maryland; M.H.A. 1959, University of Minnesota
- Leon Gintzig, *Professor of Hospital Administration*  
B.S. 1947, Boston University; M.S. 1954, Northwestern University; Ph.D. 1958, University of Iowa
- Francis Joseph Girard, *Assistant Professorial Lecturer in Business Administration*  
A.B. 1960, M.B.A. 1961, The George Washington University
- Jean Marie Gladding, *Lecturer in English*  
A.B. 1964, A.M. 1966, The George Washington University
- Gerald John Glassman, *Assistant Professorial Lecturer in Business Administration*  
A.B. in Govt. 1950, M.B.A. 1966, The George Washington University
- Irving Isadore Glick, *Assistant Professor of Mathematics*  
A.B. 1953, Johns Hopkins University; Ph.D. 1961, University of Maryland
- Ira David Godwin, *Assistant Clinical Professor of Pathology*  
B.S. 1952, M.D. 1955, University of North Carolina
- Cecil Earnest Goode, *Professorial Lecturer in Public Administration*  
B.S., M.S. 1938, Purdue University
- Barry Hugh Gordon, *Assistant Professorial Lecturer in Business Administration*  
B.S. 1956, New York University; M.B.A. 1957, University of Pennsylvania
- \*Bernard Gordon, *Visiting Research Professor of Political Science*  
A.B. 1953, A.M. 1955, New York University; Ph.D. 1959, University of Chicago
- Francis Byron Gordon, *Professorial Lecturer on Virology*  
B.S. 1927, Illinois Wesleyan University; Ph.D. 1936, M.D. 1937, University of Chicago
- Charles Mayo Goss, *Visiting Professor of Anatomy*  
A.B. 1921, M.D. 1926, Yale University
- Daniel Gottlieb, *Associate Professorial Lecturer in Journalism*  
A.B. 1952, Antioch College; A.M. 1953, Johns Hopkins University
- Edward Gramlich, *Assistant Professorial Lecturer in Economics*  
A.B. 1961, Williams College; A.M. 1962, Ph.D. 1965, Yale University
- Wood Gray, *Professor of American History*  
A.B. 1927, A.M. 1928, University of Illinois; Ph.D. 1933, University of Chicago
- George Wallace Grayson, Jr., *Assistant Professorial Lecturer in Political Science*  
A.B. 1960, University of North Carolina; A.M. 1963, Johns Hopkins University
- Marvin David Green, *Assistant Professor of Mathematics*  
B.S. 1961, A.M. 1962, Ph.D. 1965, University of Cincinnati
- Samuel Greenhouse, *Professorial Lecturer in Statistics*  
B.S. 1938, City College, New York; A.M. 1954, Ph.D. 1959, The George Washington University
- John Robert Greenya, *Instructor in English Composition*  
A.B. 1960, Marquette University; A.M. 1966, Catholic University of America
- Angus MacIvor Griffin, *Professor of Microbiology*  
Ph.B. 1931, A.M. 1933, Ph.D. 1938, Brown University
- Fuller Orville Griffith, *Instructor in Art (Graphics)*  
B.S. 1952, University of Wisconsin
- Lewis John Griffith, *Visiting Professor of Microbiology*  
B.S. 1948, M.S. 1950, Ph.D. 1953, Ohio State University

\* On leave of absence 1966-67.



- William Byron Griffith, *Assistant Professor of Philosophy*  
A.B. 1958, University of Notre Dame; A.M. 1962, Ph.D. 1963, Yale University
- John Robert Grinnell, *Associate Professorial Lecturer in Physical Education, Health, and Recreation for Men*  
B.S. in P.E. 1950, A.M. in Ed. 1951, LL.B. 1961, The George Washington University
- Phillip Donald Grub, *Assistant Professor of Business Administration*  
A.B., A.B. in Ed. 1953, Eastern Washington State College; M.B.A. 1960, D.B.A. 1964, The George Washington University
- Francis Stanley Grubar, *Associate Professor of Art*  
A.B. 1948, A.M. 1949, University of Maryland; A.M. 1952, Ph.D. 1966, Johns Hopkins University
- Robert Francis Guerrin, *Assistant Professorial Lecturer in Sociology*  
A.B. 1955, Clark University; A.M. 1960, New York University
- Grace Hughes Guin, *Assistant Clinical Professor of Pathology*  
B.S. 1938, Birmingham-Southern College; M.D. 1943, Vanderbilt University
- Paul Guinn, *Associate Professorial Lecturer in Political Science, Air Force Advanced Management Program*  
A.B. 1950, Swarthmore College; A.M. 1951, Ph.D. 1962, Harvard University
- David Axel Gustafson, *Instructor in Drama*  
A.B. 1963, Knox College; M.S. 1965, University of Oregon
- Andrew Gyorgy, *Professor of International Affairs*  
A.B. 1937, J.D. 1938, University of Budapest, Hungary; A.M. 1939, University of California; Ph.D. 1943, University of California at Los Angeles
- Sheldon Edward Haber, *Associate Professorial Lecturer in Economics*  
A.B. 1954, City College, New York; Ph.D. 1958, Johns Hopkins University
- Robert Arthur Hadley, *Assistant Professor of History*  
A.B. 1959, Bowdoin College; A.M. 1960, Ph.D. 1964, University of Pennsylvania
- Fred Latimer Hadsel, *Professorial Lecturer in Political Science*  
A.B. 1937, Miami University; A.M. 1938, Clark University; Ph.D. 1942, University of Chicago
- William Archer Hagins, *Associate Professorial Lecturer in Physiology*  
A.B. 1946, A.M. 1948, M.D. 1952, Stanford University; Ph.D. (Cantab.) 1958, Cambridge University, England
- Fred Ernst Hahn, *Professorial Lecturer in Pharmacology*  
Ph.D. 1948, University of Kiel, Germany
- Gerald Anthony Hahn, *Assistant Research Professor of Pharmacology*  
A.B. 1961, Bellarmine College; Ph.D. 1966, University of Louisville
- Francis Newell Hamblin, *Professor of Education*  
A.B. 1939, Amherst College; Ed.M. 1946, Ed.D. 1954, Harvard University
- Lilien Filipovitch Hamilton, *Instructor in Art*  
A.B. 1962, A.M. 1965, The George Washington University
- Gloria Mae Hammack, *Assistant Professor of Biology*  
B.S. 1958, M.S. 1960, Ph.D. 1965, The George Washington University
- Lois Reel Hammer, *Assistant Professor of Psychology*  
A.B. 1957, Bowling Green State University; A.M. 1959, University of Minnesota; Ph.D. 1965, Harvard University
- Raymond George Hanken, *Professor of Physical Education, Health, and Recreation for Men*  
B.S. in P.E. 1938, A.M. in Ed. 1952, The George Washington University
- Ira Bowers Hansen, *Professor of Zoology*  
B.S. 1928, A.M. 1929, Wesleyan University; Ph.D. 1932, University of Chicago
- Louis Hansen, *Associate Clinical Professor of Pathology*  
B.S., D.D.S. 1941, University of Southern California; M.S. 1955, Georgetown University
- Teruo Hara, *Studio Lecturer in Art (Ceramics)*  
A.B. 1950, A.M. 1952, Tokyo Kyoiku University, Japan



- John Hardt, *Professorial Lecturer in Economics*  
A.B. 1945, A.M. 1948, University of Washington; A.M. 1950, Ph.D. 1955, Columbia University
- John May Harrison, *Assistant Professor of Physics*  
B.S. 1929, M.S. 1939, Bucknell University
- Robert Frank Hartley, *Assistant Professor of Business Administration*  
B.B.A. 1949, Drake University; M.B.A. 1962, University of Minnesota
- William Leas Haskell, *Assistant Professorial Lecturer in Physiology*  
B.S. 1960, University of California at Santa Barbara; M.S. 1963, Ph.D. 1965, University of Illinois
- Richard Catlin Haskett, *Professor of American History*  
A.B. 1940, A.M. 1941, Indiana University; A.M. 1948, Ph.D. 1952, Princeton University
- Dorothy Henderson Heilman, *Professorial Lecturer on Cellular Immunology*  
B.S. 1927, M.D. 1932, Northwestern University; M.S. 1940, University of Minnesota
- Elson Bowman Helwig, *Clinical Professor of Pathology (Dermatologic Pathology)*  
B.S. 1930, M.D. 1932, Indiana University
- George Francis Henigan, Jr., *Professor of Speech; Director of Forensics*  
A.B. 1936, Nebraska State Teachers College; Ph.M. 1940, University of Wisconsin
- \*Dagmar Renate Kirshner Henney, *Assistant Professor of Mathematics*  
Abitur 1951, Helene Lange Gymnasium, Germany; B.S. 1954, M.S. 1956, University of Miami; Ph.D. 1964, University of Maryland
- David Robert Henriquez, Capt., USAF, *Professor of Aerospace Studies; Director, Division of Aerospace Studies*  
B.S. in B.A. 1955, University of Florida
- †Charles Joseph Herber, *Associate Professor of European History*  
A.B. 1952, Dickinson College; A.M. 1957, Ph.D. 1965, University of California
- Gilbert Herer, *Professorial Lecturer in Speech*  
B.S. 1953, M.S. 1954, Syracuse University; Ph.D. 1964, Northwestern University
- Julia Elizabeth Hicks, *Instructor in Spanish*  
A.B. 1946, A.M. 1947, University of Tennessee
- Frank Higginbotham, *Professorial Lecturer in Accounting*  
B.S. 1930, M.S. 1934, University of Illinois; C.P.A. 1942, State of Indiana; C.P.A. 1943, State of Illinois
- Philip Henry Highfill, Jr., *Professor of English Literature*  
A.B. 1942, Wake Forest College; A.M. 1948, Ph.D. 1950, University of North Carolina
- Peter Proal Hill, *Associate Professor of History*  
A.B. 1949, Tufts University; A.M. 1954, Boston University; Ph.D. 1966, The George Washington University
- James William Hillis, *Associate Professor of Speech*  
B.S. 1952, University of Nebraska; A.M. 1957, University of Maryland; Ph.D. 1963, Ohio State University
- Harold Clendenin Hinton, *Associate Professor of International Affairs*  
A.B. 1946, A.M. 1948, Ph.D. 1951, Harvard University
- Herman Hedberg Hobbs, *Professor of Physics*  
B.S. 1953, M.S. 1955, The George Washington University; Ph.D. 1958, University of Virginia
- Cornelia Hoch-Ligeti, *Assistant Clinical Professor of Pathology*  
M.D. 1931, University of Vienna, Austria
- Dorothy Dotton Hoelzer, *Lecturer in Biological Sciences*  
A.B. 1942, Barnard College
- John Bernard Holden, *Professorial Lecturer in Education*  
B.S. 1932, Ohio University; A.M. 1936, Ph.D. 1955, Ohio State University

\* On leave of absence spring semester 1967.

† On sabbatical leave 1966-67.



- Mary Alida Holman, *Associate Professor of Economics*  
A.B. 1955, A.M. 1957, Ph.D. 1963, The George Washington University
- Samuel Holvey, *Studio Lecturer in Art (Design)*  
B.F.A. 1957, Syracuse University
- \*Robert Honeygosky, *Assistant Professor of Speech*  
A.B. 1959, University of Pittsburgh; A.M. 1961, University of Southern California
- William Duane Hope, *Adjunct Lecturer in Biological Sciences*  
B.S. 1957, M.S. 1960, Colorado State University; Ph.D. 1964, University of California
- Waring Carrington Hopkins, *Professor of International Affairs, Naval War College Center, Newport, Rhode Island*  
A.B. 1945, Duke University; Ph.D. 1949, University of Paris, France
- Richard Joseph Hornfeck, *Instructor in Physical Education, Health, and Recreation for Men*  
B.S. in P.E. 1963, The George Washington University
- Gloria Lyon Horrworth, *Assistant Professor of Education*  
A.B. 1952, Los Angeles State College of Applied Arts and Sciences; A.M. 1961, San Fernando Valley State College
- Nicholas Hotton, *Professorial Lecturer in Geology*  
B.S. 1947, Ph.D. 1950, University of Chicago
- Hubert Whitney Houghton, *Associate Professorial Lecturer in Education*  
A.B. 1936, A.M. 1941, State University of New York at Buffalo; Ph.D. 1956, Syracuse University
- Charles Edwin Houston, *Professorial Lecturer in Business Administration*  
A.B. 1931, Drury College; A.M. 1932, Clark University; D.C.S. 1941, New York University
- Murray Louis Howder, *Assistant Professorial Lecturer in Slavic and Oriental Languages and Literatures*  
A.B. 1954, The George Washington University; A.M. 1960, Middlebury College
- John Stewart Howe, *Associate Clinical Professor of Pathology*  
A.B. 1928, University of South Dakota; M.D. 1932, Johns Hopkins University
- James Melton Howell, *Assistant Professorial Lecturer in Economics*  
A.B. 1956, Texas A&M University; Ph.D. 1963, Tulane University of Louisiana
- Tao-tai Hsia, *Professorial Lecturer in Law*  
LL.B. 1945, National Cheng-chih University, China; LL.M. 1950, J.S.D. 1952, Yale University
- Tso-Liang Hsiao, *Visiting Research Professor of International Affairs, Institute for Sino-Soviet Studies*  
Ph.D. 1948, University of Berlin, Germany
- Ching-Yao Hsieh, *Associate Professor of Economics*  
A.B. 1939, St. John's University, China; A.M. 1958, Ph.D. 1964, The George Washington University
- Rudolph Hugh, *Associate Professor of Microbiology*  
B.S. 1948, Michigan State University; Ph.D. 1954, Loyola University, Illinois
- \*Thelma Hunt, *Professor of Psychology*  
A.B. 1924, A.M. 1925, Ph.D. 1927, M.D. 1935, The George Washington University
- Steven John Hunter, *Assistant Professor of Economics*  
A.B. 1958, Drew University; Ph.D. 1963, University of Virginia
- Gérard Paul Huvé, *Assistant Professor of French*  
A.B. 1963, American University
- George Idelson, *Associate Professorial Lecturer in Business Administration*  
B.S. 1947, New York University
- Clifford Terrence Ireland, *Assistant Professor of Statistics*  
A.B. 1960, Cornell University; Ph.D. 1967, The George Washington University

\* On sabbatical leave fall semester 1966-67.



- Rufus Philip Isaacs, *Professorial Lecturer in Statistics*  
B.S. 1936, Massachusetts Institute of Technology; A.M. 1939, Ph.D. 1942, Columbia University
- Margaret Ives, *Professorial Lecturer in Psychology*  
A.B. 1924, Vassar College; A.M. 1929, Ph.D. 1938, University of Michigan
- David Iwamoto, *Assistant Professorial Lecturer in Education*  
A.B. 1947, Walla Walla College; A.M. 1948, Columbia Union College; A.M. in Ed. 1952, Ed.D. 1963, The George Washington University
- Richard Franklin Jacobsen, *Assistant Professor of Health Care Administration*  
A.B. 1961, San Francisco State College; M.S. in P.H. 1965, University of California at Los Angeles
- Miriam Petersen Jaegerman, *Instructor in Education*  
A.B. 1945, Goucher College
- William James Jaffurs, *Assistant Clinical Professor of Pathology*  
B.S. 1948, Pennsylvania State University; M.D. 1952, Jefferson Medical College of Philadelphia
- Mahavir Jain, *Lecturer in Accounting*  
A.B. 1955, A.M. 1961, Punjab University
- Donald Richard Janis, *Instructor in English Composition*  
A.B. 1955, A.M. 1962, Brown University
- Frank Skiff Jannotta, *Assistant Professor of Pathology*  
A.B. 1951, Williams College; M.D. 1955, University of Pennsylvania
- Herbert Jehle, *Professor of Physics*  
Dr. Ing. 1933, Institute of Technology, Berlin
- Joe Lee Jessup, *Professor of Business Administration*  
B.S. in B.A. 1936, University of Alabama; M.B.A. 1941, Harvard University; LL.D. 1964, University of Chungang, Korea
- Eva Mayne Johnson, *Associate Professor of Psychology*  
A.B. 1949, A.M. 1951, Ph.D. 1957, The George Washington University
- Everett Herschel Johnson, *Professor of Statistics*  
A.B. 1926, DePauw University; A.M. 1929, Lehigh University; Ph.D. 1942, University of Michigan
- Lent Clifton Johnson, *Special Lecturer in Pathology*  
B.S. 1931, M.D. 1935, University of Chicago
- Nancy Diers Johnson, *Instructor in Physical Education, Health, and Recreation for Women*  
B.S. 1955, University of Minnesota; A.M. 1966, University of Iowa
- Shirley Alma Johnson, *Associate Professor of Physiology*  
A.B. 1945, Ph.D. 1949, University of Toronto, Canada
- Thomas Nick Johnson, *Associate Professor of Anatomy*  
B.S. 1944, St. Ambrose College; M.S. 1949, Michigan State University; Ph.D. 1953, University of Michigan
- William Reid Johnson, *Associate Professor of History*  
A.B. 1951, Oberlin College; A.M. 1955, Ph.D. 1961, University of Washington
- Werner Robert Jondorf, *Assistant Research Professor of Pharmacology*  
B.S. 1950, University of Wales; Ph.D. 1956, University of London, England
- Meredith Leam Jones, *Adjunct Lecturer in Biological Sciences*  
A.B. 1948, A.M. 1952, Ph.D. 1956, University of California
- Paul Bentley Jones, *Assistant Professor of Business Administration in The George Washington University Program, Air Command and Staff College, Maxwell Air Force Base, Alabama*  
M.B.A. 1947, Harvard University
- \*Robert Gean Jones, *Professor of Religion*  
A.B. 1947, Baylor University; B.D. 1950, A.M. 1957, Ph.D. 1959, Yale University

\* On sabbatical leave fall semester 1966-67.



- \*Robert Smith Jordan, *Associate Professor of International Affairs*  
A.B. 1951, University of California; M.S. 1955, University of Utah; A.M. 1957, Ph.D. 1960, Princeton University; D.Phil (Oxon.) 1960, Oxford University, England
- Chester Roy Julian, *Lecturer in Business Administration*  
B.S. in C.E. 1961, Texas A&M University; M.C.E. 1964, Catholic University of America
- Robert Konrad Kahn, *Associate Professorial Lecturer in Psychology*  
A.B. 1946, University of Pennsylvania; A.M. 1953, The George Washington University; Ph.D. 1957, Pennsylvania State University
- Hans Elmar Kaiser, *Assistant Professor of Anatomy*  
Ph.D. 1958, University of Tuebingen, West Germany
- Peter Jason Kalman, *Associate Professorial Lecturer in Mathematics*  
A.B. 1961, City College, New York; M.S. 1963, Ph.D. 1964, Purdue University
- Jacobus Martinus Kaper, *Associate Research Professor of Botany*  
Candidaats 1951, Doctoraal 1954, Ph.D. 1957, University of Leiden, Netherlands
- Norman Kaplan, *Professor of Sociology*  
A.B. 1947, Brooklyn College; Ph.D. 1955, Columbia University
- Sylvan Julian Kaplan, *Professorial Lecturer in Psychology*  
A.B. 1940, A.M. 1946, University of Texas; Ph.D. 1950, Stanford University
- Kenneth Casper Kates, *Professorial Lecturer in Zoology*  
A.B. 1932, Bard College; A.M. 1934, Ph.D. 1937, Duke University
- Irving Katz, *Assistant Professor of Mathematics*  
B.S. 1956, Brooklyn College; A.M. 1958, Ohio State University; Ph.D. 1964, University of Maryland
- Samuel Irving Katz, *Professorial Lecturer in Economics*  
A.B. 1940, A.M. 1942, The George Washington University; M.P.A. 1948, Harvard University
- Erle Galen Kauffman, *Adjunct Professor of Geology*  
B.S. 1955, M.S. 1956, Ph.D. 1961, University of Michigan
- Robert Kaye, *Professorial Lecturer in Business Administration*  
A.B. in Govt. 1948, A.M. in Govt. 1950, D.B.A. 1961, The George Washington University
- Elmer Louis Kayser, *Professor of European History; University Historian*  
A.B. 1917, A.M. 1918, LL.D. 1948, The George Washington University; Ph.D. 1932, Columbia University
- John Whitefield Kendrick, *Professor of Economics*  
A.B. 1937, A.M. 1939, University of North Carolina; Ph.D. 1955, The George Washington University
- Robert Wayne Kenny, *Associate Professor of History*  
B.J. 1953, University of Texas; A.M. 1957, University of Minnesota; Ph.D. 1963, University of Chicago
- \*Hewitt Kenyon, *Associate Professor of Mathematics*  
B.S. 1942, Ph.D. 1954, University of California
- Jackson Kelley Kern, *Instructor in Statistics*  
A.B. 1938, Fairmont State College; M.B.A. 1954, Columbia University
- William Key, *Associate Professor of Russian*  
A.B. 1948, University of Missouri; A.M. 1957, Ph.D. 1965, University of Pennsylvania
- Norayr Krikor Khatcheressian, *Assistant Professor of Physics*  
A.B. 1960, A.M. 1963, The George Washington University; Ph.D. 1966, University of Virginia
- Jerry Stuart Kidd, *Associate Professorial Lecturer in Psychology*  
B.S. 1950, Illinois Wesleyan University; A.M. 1954, Ph.D. 1956, Northwestern University
- David Kieserman, *Assistant Professor of Drama*  
A.B. 1958, Montclair State College; A.M. 1964, University of Illinois
- Margaret Ann Kiley, *Assistant Professor of Education*  
B.S. in Ed. 1951, State University of New York at Buffalo; A.M. in Ed. 1953, Ed.D. 1965, The George Washington University

\* On leave of absence 1966-67.



- Kwang Suh Kim, *Associate Research Professor of Pharmacology*  
M.D. 1947, Seoul National University, Korea; M.S. 1949, Ph.D. 1952, University of Illinois
- James Cecil King, *Professor of German*  
A.B. 1949, A.M. 1950, Ph.D. 1954, The George Washington University
- Virginia Randolph Kirkbride, *Associate Professor of Educational Psychology; Dean of Women*  
A.B. 1941, A.M. 1942, University of Nebraska; Ed.D. 1959, The George Washington University
- Arthur David Kirsch, *Associate Professor of Statistics*  
A.B. 1955, The George Washington University; M.S. 1956, Ph.D. 1957, Purdue University
- Donald Chenoweth Kline, *Professor of Art*  
B.Arch. 1927, The George Washington University; M.F.A. 1951, Catholic University of America
- Philip Klubes, *Assistant Research Professor of Pharmacology*  
B.S. 1956, Queens College, New York; M.S. 1959, Ph.D. 1962, University of Minnesota
- Jack Louis Knetsch, *Visiting Professor of Economics*  
B.S. 1955, M.S. 1956, Michigan State University; M.P.A. 1959, Ph.D. 1963, Harvard University
- George Martin Koehl, *Professor of Physics; Associate Dean of Columbian College of Arts and Sciences*  
A.B. 1931, University of North Carolina; A.M. 1933, The George Washington University
- Thomas Wayne Koontz, *Instructor in English*  
A.B. 1961, Miami University; A.M. 1965, Indiana University
- Stephen Joseph Korcheck, *Instructor in Physical Education, Health, and Recreation for Men*  
B.S. in P.E. 1954, A.M. in Ed. 1966, The George Washington University
- Louis Sampson Kornicker, *Adjunct Lecturer in Biological Sciences*  
B.S. 1941, B.S. 1942, University of Alabama; A.M. 1954, Ph.D. 1957, Columbia University
- Zelda Horner Kosh, *Professorial Lecturer in Speech*  
A.B. 1933, Adelphi University; A.M. 1934, Columbia University
- Tom Kouzes, *Professorial Lecturer in Business Administration*  
A.B. in Govt. 1949, A.M. in Govt. 1952, The George Washington University
- \*Wolfgang Herbert Kraus, *Professor of Political Science*  
Dr.Jur. 1929, University of Frankfurt, Germany; S.J.D. 1931, Harvard University
- Lucie Muller Kressley, *Lecturer in German*  
Ph.D. 1949, Phillips University
- Joseph Leo Krieger, *Professorial Lecturer in Business Administration*  
B.B.A. 1936, M.B.A. 1939, City College, New York; Ph.D. 1956, American University
- †Ruth Marilyn Krulfeld, *Assistant Professor of Anthropology*  
A.B. 1956, Brandeis University
- Richard John Kubalak, *Assistant Professorial Lecturer in Education*  
B.S. 1951, State University of New York at Buffalo; A.M. 1953, Columbia University
- Carl Albert Kuether, *Professorial Lecturer on General Biochemistry*  
A.B. 1936, Miami University; M.S. 1940, Wayne State University; Ph.D. 1943, The George Washington University
- Solomon Kullback, *Professor of Statistics*  
B.S. 1927, City College, New York; A.M. 1929, Columbia University; Ph.D. 1934, The George Washington University
- Julian Kulski, *Professor of Urban Planning*  
B.Arch. 1953, Yale University; Ph.D. 1966, Warsaw Institute of Technology, Poland
- Morton Kupperman, *Professorial Lecturer in Statistics*  
B.S. 1938, City College, New York; A.M. 1950, Ph.D. 1957, The George Washington University
- Boleslaus Kurpiewski, *Assistant Clinical Professor of Psychology*  
A.B. 1949, M.S. 1950, A.M. 1951, Syracuse University; Ph.D. 1958, University of Oklahoma

\* On sabbatical leave spring semester 1967.

† On leave of absence spring semester 1967.



- Frederick Charles Kurtz, *Associate Professor of Accounting*  
B.S. in Com. 1948, University of Virginia; M.B.A. 1949, University of Pennsylvania; C.P.A. 1952, State of Maryland
- George Madison Lady, *Assistant Professorial Lecturer in Economics*  
A.B. 1961, A.M. 1963, The George Washington University
- Peter Wilhelm Lampert, *Clinical Instructor in Pathology*  
M.D. 1955, University of Frankfurt, Germany
- Harry Hill Landon, Jr., *Associate Professorial Lecturer in Physics*  
B.S. 1944, M.S. 1948, Case Institute of Technology; Ph.D. 1950, Yale University
- John Carl Lang, *Professorial Lecturer in Education*  
A.B. 1936, North Dakota State Teachers College, Valley City; A.M. 1949, Northwestern University; A.M. in Ed. 1949, Ed.D. 1951, The George Washington University
- Leroy Lester Langley, *Professorial Lecturer in Physiology*  
A.B. 1938, University of California at Los Angeles; A.M. 1939, Stanford University; Ph.D. 1942, Yale University
- Lianna Rose Larabee, *Assistant Professorial Lecturer in Education; Assistant Dean of Women*  
A.B. 1959, Rosary College; M.S. 1961, Indiana University
- Thomas Larson, *Associate Professorial Lecturer in International Affairs, Institute for Sino-Soviet Studies*  
A.B. 1937, University of Nebraska; A.M. 1938, University of Chicago
- Leonard Laster, *Professorial Lecturer in Physiology*  
A.B. 1949, M.D. 1950, Harvard University
- John Francis Latimer, *Professor of Classical Languages and Literatures*  
A.B. 1922, Litt.D. 1964, Mississippi College; A.M. 1926, University of Chicago; Ph.D. 1929, Yale University
- Jeuel LaTorre, *Assistant Professorial Lecturer in Mathematics*  
A.B. 1959, Coker College; A.M. 1964, University of Tennessee
- Thelma Z. Lavine, *Elton Professor of Philosophy*  
A.B. 1936, A.M. 1937, Ph.D. 1939, Radcliffe College
- Esther Christian Lawton, *Assistant Professorial Lecturer in French*  
A.B. 1932, University of Rochester; A.M. 1942, The George Washington University
- Pietro Lazzari, *Studio Lecturer in Art (Painting)*
- \*Berton Joe Leach, *Associate Professor of Zoology*  
A.B. 1957, Washington University; A.M. 1960, Ph.D. 1963, University of Missouri
- Hugh Linus LeBlanc, *Professor of Political Science; Director, Programs in Public Affairs*  
A.B. 1948, Louisiana State University; A.M. 1950, University of Tennessee; Ph.D. 1958, University of Chicago
- Lubin Poe Leggette, *Depew Professor of Speech and Professor of Drama*  
A.B. 1932, A.M. 1938, University of North Carolina; Ed.D. 1956, Columbia University
- Wolfram Karl Legner, *Professor of German*  
A.B. 1923, Harvard University; A.M. 1932, Ph.D. 1936, University of Pennsylvania
- Laurence Pereira Leite, *Associate Professor of Art*  
A.M. 1956, Ph.D. 1966, Johns Hopkins University
- Charles Ulysses Letourneau, *Professorial Lecturer in Health Care Administration*  
A.B. 1932, Loyola University, Canada; M.D. 1937, B.C.L. 1948, McGill University, Canada; M.S. in H.A. 1951, Northwestern University
- Nicholas Letsou, *Instructor in French*  
A.B. 1950, Tufts University; A.M. 1965, Stanford University

\* On leave of absence 1966-67.



- Max Levitan, *Associate Professorial Lecturer in Anatomy*  
A.B. 1944, University of Chicago; A.M. 1946, University of Michigan; Ph.D. 1949, Columbia University
- Bernard Isaac Levy, *Professor of Psychology; Director, Graduate Training in Clinical Psychology*  
A.B. 1948, New York University; Ph.D. 1952, University of Rochester
- Bert Levy, *Lecturer in Statistics*  
B.S. 1952, D.C. Teachers College
- Joseph Benjamin Levy, *Professor of Chemistry*  
B.S. 1943, University of New Hampshire; M.S. 1945, Ph.D. 1948, Harvard University
- Robert Levy, *Assistant Professor of Physiology*  
B.S. 1959, Ph.D. 1965, McGill University, Canada
- Edwin Joseph Baughman Lewis, *Professor of Accounting; Assistant Dean for Special Projects in the School of Government and Business Administration*  
A.B. 1938, University of Western Ontario, Canada; M.B.A. 1939, Northwestern University
- Ralph Kenler Lewis, *Assistant Professor of Anthropology*  
A.B. 1934, Southwest Missouri State College; A.M. 1939, University of Southern California
- Verne Bruce Lewis, *Associate Professorial Lecturer in Public Administration*  
Ed.B. 1936, Moorhead State College; A.M. 1940, University of Minnesota
- William Lewis, *Associate Professorial Lecturer in Political Science*  
A.B. 1951, A.M. 1953, The George Washington University; Ph.D. 1960, American University
- Hubert Whitman Lilliefors, *Associate Professor of Statistics*  
A.B. 1952, Ph.D. 1964, The George Washington University; A.M. 1953, Michigan State University
- Carl Arne Linden, *Assistant Professorial Lecturer in Political Science*  
A.B. 1951, Syracuse University; A.M. 1956, Harvard University; Ph.D. 1966, The George Washington University
- Calvin Darlington Linton, *Professor of English Literature; Dean of Columbian College of Arts and Sciences*  
A.B. 1935, The George Washington University; A.M. 1939, Ph.D. 1940, Johns Hopkins University
- Gordon Leslie Lippitt, *Professor of Behavioral Sciences*  
B.S. 1942, Springfield College; B.D. 1946, Yale University; A.M. 1947, University of Nebraska; Ph.D. 1959, American University
- Thomas Phillip George Liverman, *Professor of Mathematics*  
A.B. 1941, Montpellier College, France; A.M. 1948, Ph.D. 1956, University of Pennsylvania
- Leo Gerard Loftus, *Lecturer in Speech*  
A.B. 1951, Indiana University
- Kurt London, *Professor of International Affairs; Director, Institute for Sino-Soviet Studies*  
Ph.D. 1923, University of Würzburg, Germany
- Nicholas Long, *Associate Professorial Lecturer in Education (Educational Psychology)*  
A.B. 1952, Wayne State University; A.M. 1954, Ph.D. 1956, University of Michigan
- William Francis Edward Long II, *Assistant Professor of Economics*  
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Ph.D. 1937, Pazmany University, Hungary
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A.B., B.B.A. 1950, M.B.A. 1951, University of Texas; Ph.D. 1959, Ohio State University
- William Everett Maloney, *Associate Professorial Lecturer in Geology*  
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- Harold George Mandel, *Professor of Pharmacology*  
B.S. 1944, Ph.D. 1949, Yale University
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A.B. 1942, Brooklyn College; A.M. 1947, The George Washington University; Ph.D. 1954, New York University
- Maurice Myron Margulies, *Assistant Professorial Lecturer in Biological Sciences*  
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- William Henry Marlow, *Professorial Lecturer in Mathematics*  
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- William Laverne Marsh, *Associate Professor of Pathology*  
B.S. 1942, Purdue University; M.D. 1946, State University of New York at Buffalo
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- Vernon Edward Martens, *Associate Clinical Professor of Pathology*  
B.S. 1935, M.D. 1937, St. Louis University
- Otto Barnhart Martinson, Jr., *Assistant Professorial Lecturer in Accounting*  
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- David Hill Massie, *Lecturer in Geology*
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A.B. 1966, Vassar College
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A.B. 1935, Colorado College; A.M. 1937, Ph.D. 1940, University of Pittsburgh
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A.B. 1958, Michigan State University; A.M. 1963, The George Washington University
- Edward McCrensky, *Professorial Lecturer in Public Administration*  
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B.S. 1957, Colorado State College; M.S.W. 1960, University of Denver; D.S.W. 1966, Catholic University of America
- Carl Oscar McDaniels, *Associate Professor of Education*  
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- James Kenneth McDonald, *Assistant Professor of International Affairs; Director, The George Washington University Program, Naval War College Center, Newport, Rhode Island*  
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B.S. 1961, University of Southern Mississippi; A.M. 1964, University of Alabama
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A.B. 1953, Brown University; LL.B. 1956, Yale University; M.B.A. 1963, The George Washington University
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A.B. 1923, University of Minnesota; Ph.D. 1931, University of London, England
- George Stanley Rosenberg, *Visiting Associate Professor of Sociology*  
A.B. 1951, University of Chicago; A.M. 1953, Ph.D. 1960, Columbia University



- Harry Rosenblatt, *Professorial Lecturer in Statistics*  
B.S. 1948, M.S. 1953, Ph.D. 1960, The George Washington University
- Joseph Rosewater, *Adjunct Lecturer in Biological Sciences*  
B.S. 1950, M.S. 1956, University of New Hampshire; Ph.D. 1960, Harvard University
- John Ross, Jr., *Assistant Professorial Lecturer in Physiology*  
A.B. 1951, Dartmouth College; M.D. 1955, Cornell University
- Murray Ross, *Professorial Lecturer in Economics*  
B.S.S. 1935, City College, New York; A.M. 1936, Ph.D. 1941, Columbia University
- Joan Rubin, *Assistant Professor of Anthropology*  
A.B. 1954, A.M. 1956, University of Michigan; Ph.D. 1963, Yale University
- William Rucker, *Instructor in Psychology*  
B.S. 1961, University of Chicago
- Rosemary Armstrong Radford Ruether, *Assistant Professorial Lecturer in Religion*  
A.B. 1958, Scripps College; A.M. 1960, Ph.D. 1965, Claremont Graduate School and University Center
- Constance Adelaide Russell, *Studio Lecturer in Applied Music (Piano)*
- Donald Earle Russell, *Assistant Professorial Lecturer in Public Administration*  
A.B. 1945, A.M. 1948, University of Chicago
- Alexander Russo, *Studio Lecturer in Art (Painting)*  
B.F.A. 1958, Columbia University
- Robert Clinton Rutledge, *Assistant Professor of English; Assistant Dean of Columbian College of Arts and Sciences*  
A.B. 1940, University of Virginia; A.M. 1957, Ph.D. 1966, The George Washington University
- Thomas Michael Ryan, *Lecturer in Business Administration (Data Processing)*  
B.B.A. 1965, Idaho State University
- Thomas Saaty, *Professorial Lecturer in Mathematics*  
A.B. 1948, Columbia Union College; M.S. 1949, Catholic University of America; A.M. 1950, Ph.D. 1953, Yale University
- Howard Morley Sachar, *Associate Professor of History*  
A.B. 1947, Swarthmore College; A.M. 1950, Ph.D. 1953, Harvard University
- Paul Sadagursky, *Assistant Professor of Mathematics*  
B.S. 1959, Queens College, New York; M.S. 1960, University of Illinois
- Carol Ruth St. Cyr, *Professor of Education*  
B.S. 1946, Willimantic State College; A.M. 1949, Trinity College, Connecticut; Ph.D. 1955, University of Michigan
- Carl Fredric Salans, *Associate Professorial Lecturer in Political Science*  
A.B. 1954, Harvard University; A.B. 1956, LL.B. 1958, A.M. 1962, Cambridge University, England; J.D. 1957, University of Chicago
- Keith Russell Sanders, *Assistant Professor of Speech*  
B.S. 1961, M.S. 1962, Southern Illinois University
- Victoria Kochurova Sandor, *Assistant Professor of Slavic Languages*  
A.B. 1954, Moscow Institute of Foreign Languages, U.S.S.R.; A.M. 1962, Georgetown University
- Clyde Bailey Sargent, *Visiting Professor of International Affairs, Naval War College Center, Newport, Rhode Island*  
A.B. 1930, Denison University; A.M. 1932, Trinity College, Connecticut; A.M. 1946, College of Chinese Studies, Peiping, China; Ph.D. 1946, Columbia University
- Arnold Schaefer, *Professorial Lecturer in Biochemistry*  
B.S. 1939, South Dakota State University; M.S. 1941, Ph.D. 1947, University of Wisconsin
- Louis Charles Schaefer, *Assistant Professor of English*  
A.B. 1952, A.M. 1955, University of Chicago



- John Albert Schaffer, *Assistant Professorial Lecturer in Health Care Administration*  
B.S. in Ed. 1941, Pennsylvania State College, Kutztown; M.S. in H.A. 1949, Northwestern University
- Martin Warren Schein, *Visiting Professor of Biology*  
A.B. 1949, University of Iowa; D.Sc. 1954, Johns Hopkins University
- Isidor Wolfe Scherer, *Clinical Professor of Psychology*  
B.S. 1930, A.M. 1934, New York University; Ph.D. 1948, University of Nebraska
- Nancy Wilson Schick, *Lecturer in English*  
A.B. 1958, Augustana College, Illinois; A.M. 1963, The George Washington University
- Stefan Otto Schiff, *Assistant Professor of Zoology*  
B.S. 1952, Roanoke College; Ph.D. 1964, University of Tennessee
- Jeffrey Stuart Schiller, *Associate Professorial Lecturer in Sociology*  
A.B. 1961, A.M. 1962, Syracuse University
- Richard Harold Schlaegel, *Associate Professor of Philosophy*  
B.S. 1949, Springfield College; A.M. 1952, Ph.D. 1955, Boston University
- Lawrence Erwin Schlesinger, *Associate Research Professor of Psychology*  
B.S. 1943, A.M. 1948, Ph.D. 1955, Boston University
- \*William Edward Schmidt, *Professor of Chemistry*  
B.S. 1943, M.S. 1950, The George Washington University; A.M., Ph.D. 1953, Princeton University
- †Wilson Emerson Schmidt, *Professor of Economics*  
B.S. 1947, University of Maryland; A.M. 1948, University of Pittsburgh; Ph.D. 1952, University of Virginia
- Berthold Schmutzhart, *Studio Lecturer in Art (Drawing)*
- Jon Schoonmaker, *Studio Lecturer in Art (Advertising Design)*
- Maurice Herbert Schwartz, *Professorial Lecturer in Business Administration*  
A.B. 1941, University of Illinois
- Milton Allan Schwartz, *Assistant Professorial Lecturer in Statistics*  
B.S. 1938, City College, New York
- Paula Schwartz, *Lecturer in English*  
A.B. 1945, Hunter College; M.S. 1951, City College, New York
- Abraham Schwebel, *Associate Professorial Lecturer in Chemistry*  
B.S. 1935, M.S. 1938, Brooklyn College; Ph.D. 1958, University of Maryland
- Lois Katherine Green Schwoerer, *Assistant Professor of History*  
A.B. 1949, Smith College; A.M. 1952, Ph.D. 1956, Bryn Mawr College
- Henry Scofield, *Associate Clinical Professor of Pathology*  
B.S. 1942, D.D.S. 1945, Loyola University, Illinois; M.S. 1952, Georgetown University
- Norman Orville Scribner, Jr., *Studio Lecturer in Applied Music (Organ)*  
Mus.B. 1961, Peabody Institute of the City of Baltimore
- Edward William Seaman, *Assistant Professorial Lecturer in Religion*  
A.B. 1949, Cornell University; B.H.L. 1951, M.H.L., Rabbi, 1954, Hebrew Union College
- Robert Curtis Sedwick, *Associate Professor of Business Administration; Director, The George Washington University Center (Tidewater Area), Fort Monroe, Virginia*  
B.S.E. 1949, U.S. Coast Guard Academy; M.E.A. 1960, D.B.A. 1964, The George Washington University
- Lothar George Seeger, *Assistant Professor of German*  
A.B. 1954, Susquehanna University; B.D. 1957, Lutheran Theological Seminary, Philadelphia; A.M. 1962, Ph.D. 1966, University of Pennsylvania
- Aaron Bear Seidman, *Associate Professorial Lecturer in Hebrew*  
A.B. 1941, Rabbi 1946, Yeshiva University; A.M. 1944, New York University

\* On sabbatical leave fall semester 1966-67.

† On leave of absence 1966-67.



- \*Robert Poindexter Sharkey, *Professor of Economic History*  
A.B. 1948, Princeton University; Ph.D. 1958, Johns Hopkins University
- Thomas Elliott Shaughnessy, *Associate Professor of Business and Public Administration, The George Washington University Center (Tidewater Area), Fort Monroe, Virginia*  
B.S. 1933, Massachusetts Institute of Technology; A.M. in Ed. 1948, The George Washington University; Ed.D. 1957, Johns Hopkins University
- Sidney Shifrin, *Professorial Lecturer in Biochemistry*  
B.S. 1952, University of Maryland; Ph.D. 1957, Northwestern University
- Chung-wen Shih, *Associate Professor of Chinese*  
A.B. 1945, St. John's University, China; A.M. 1949, Ph.D. 1955, Duke University
- Ellis Irving Shook, *Assistant Professorial Lecturer in Speech*  
A.B. 1949, Temple University
- Milton Shore, *Associate Professorial Lecturer in Psychology*  
A.B. 1949, Harvard University; A.M. 1950, Boston University
- Walter Allen Shropshire, Jr., *Associate Professorial Lecturer in Botany*  
B.S. 1954, M.S. 1956, Ph.D. 1958, The George Washington University
- Robert Hermann Shumway, *Associate Professor of Statistics*  
A.B. 1958, Carleton College; M.S. 1960, Iowa State University of Science and Technology; Ph.D. 1965, The George Washington University
- Frederic Richard Siegel, *Associate Professor of Geochemistry*  
A.B. 1954, Harvard University; M.S. 1958, Ph.D. 1961, University of Kansas
- Robert Sumner Sigafos, *Associate Professorial Lecturer in Botany*  
B.S. 1942, M.S. 1943, Ohio State University; A.M. 1949, Ph.D. 1951, Harvard University
- David Elliot Silber, *Assistant Professor of Psychology*  
A.B. 1958, Wayne State University; A.M. 1960, Ohio University; Ph.D. 1965, University of Michigan
- Nat Simons, Jr., *Associate Professorial Lecturer in Economics*  
A.B. 1955, St. Mary's University of San Antonio; A.M. 1956, Ohio University; Ph.D. 1962, Ohio State University
- Richard Baker Simons, *Associate Professorial Lecturer in History*  
A.B. 1941, Miami University; Ph.D. 1952, University of Chicago
- Clark Louis Simpson, *Professorial Lecturer in Accounting*  
M.C.S. 1954, Catholic University of America; C.P.A. 1933, State of Ohio
- Herbert Sims, *Instructor in Spanish*  
A.B. 1959, Texas Christian University; A.M. 1963, The George Washington University
- Daniel Sinick, *Professor of Education*  
A.B. 1936, City College, New York; A.M. 1937, State University of New York at Albany; Ph.D. 1955, New York University
- Michael Richard Skigen, *Assistant Professor of Accounting*  
B.S. in B.A. 1962, Lehigh University; M.B.A. 1964, New York University
- Harold Kenneth Skramstad, Jr., *Instructor in English*  
A.B. 1963, The George Washington University
- Abbie Oliver Smith, *Assistant Professorial Lecturer in Education*  
B.S. in P.E. 1953, A.M. in Ed. 1958, The George Washington University
- Benjamin Williams Smith, *Associate Professor of Biochemistry*  
B.S. 1940, Virginia Polytechnic Institute; M.S. 1947, Ph.D. 1951, The George Washington University
- Lowell Cyrus Smith, *Assistant Professor of Business and Public Administration, Air University Center, Maxwell Air Force Base, Alabama*  
B.S. in B.A. 1953, Kent State University; M.B.A. 1963, The George Washington University
- Lyman Bradford Smith, *Professorial Lecturer in Botany*  
A.B. 1925, A.M. 1928, Ph.D. 1930, Harvard University

\* On leave of absence 1966-67.



- Nan Byrd Smith, *Instructor in Physical Education, Health, and Recreation for Women*  
B.S. in P.E. 1962, A.M. in Ed. 1966, The George Washington University
- Patsy Madelyn Smith, *Lecturer in Art*  
A.B. 1964, A.M. 1965, The George Washington University
- Thomas Russell Smith, *Associate Professorial Lecturer in Journalism*  
B.J. 1952, University of Missouri
- \*William Arthur Smith, *Associate Professor of Mathematics*  
A.B. 1941, A.M. 1947, Syracuse University
- John Michael Smothers, *Assistant Clinical Professor of Psychology*  
A.B., A.M. 1955, Ph.D. 1961, University of Chicago
- Jeanne Ellen Snodgrass, *Associate Professor of Physical Education, Health, and Recreation for Women*  
A.B. 1952, Ohio Wesleyan University; M.S. in P.E. 1953, Smith College
- James Max Snyder, *Assistant Research Professor of Education*  
B.S. in Ed. 1935, A.M. 1939, West Virginia University
- Joseph Nissen Snyder, *Assistant Professorial Lecturer in Mathematics*  
B.S. 1955, A.M. 1958, University of Oklahoma
- Israel Gregory Sohn, *Professorial Lecturer in Geology*  
B.S. 1935, City College, New York; A.M. 1938, Columbia University
- Richard Martin Soland, *Assistant Professorial Lecturer in Business Administration*  
B.E.E. 1961, Rensselaer Polytechnic Institute; Ph.D. 1964, Massachusetts Institute of Technology
- Henry Solomon, *Professorial Lecturer in Economics*  
A.B. 1949, Brooklyn College; A.M. 1950, Ph.D. 1959, New York University
- Waldo Sommers, *Professor of Public Administration*  
A.B. 1927, Heidelberg College; A.M. 1934, Ph.D. 1948, Yale University
- Edmund Sonnenblick, *Associate Professorial Lecturer in Physiology*  
A.B. 1954, Wesleyan University; M.D. 1958, Harvard University
- Kenneth Malcolm Sowers, *Associate Professorial Lecturer in Public Administration*  
A.B. 1934, Columbia University; B. of S.Th. 1939, General Seminary, New York; A.M. in Pub. Adm. 1956, The George Washington University; D.D. 1961, Virginia Theological Seminary
- Eugene Lewis Speck, *Lecturer in Microbiology*  
A.B. 1958, Brandeis University; M.S. 1961, University of Massachusetts; Ph.D. 1966, The George Washington University
- Loretta May Stallings, *Professor of Physical Education, Health, and Recreation for Women; Director, Women's Athletics*  
A.B. 1947, Stanford University; A.M. 1950, University of the Pacific; Ed.D. 1965, University of Texas
- George Stambuk, *Associate Professor of International Affairs, Naval War College Center, Newport, Rhode Island*  
Abs.Jur. 1943, University of Zagreb, Czechoslovakia; A.M. 1956, Ph.D. 1961, Indiana University
- Selig Starr, *Assistant Professorial Lecturer in Statistics*  
A.B. 1940, Brooklyn College; A.M. 1951, Ph.D. 1962, The George Washington University
- Edward Steers, Jr., *Professorial Lecturer in Biochemistry*  
B.S. 1959, Ph.D. 1963, University of Pennsylvania
- Carl Steiner, *Assistant Professor of German*  
A.B. 1958, A.M. 1962, Ph.D. 1966, The George Washington University
- George Steiner, *Associate Professor of Music; Director of Orchestra*  
B.S. 1938, Johns Hopkins University; Mus.B. 1938, Mus.M. 1940, Peabody Institute of the City of Baltimore

\* On sabbatical leave fall semester 1966-67.



- John Stephens, *Studio Lecturer in Applied Music (Trumpet)*  
Mus.B. 1951, Mus.M. 1962, Catholic University of America
- Richard Walton Stephens, *Professor of Sociology*  
A.B. 1951, Franklin and Marshall College; A.M. 1953, Ph.D. 1956, University of North Carolina
- Elizabeth Weiss Stephenson, *Assistant Professor of Physiology*  
B.S. 1947, University of Chicago; Ph.D. 1964, The George Washington University
- Edwin Lockwood Stevens, *Professor of Speech*  
A.B. 1936, Rutgers, the State University; A.M. 1942, Columbia University
- A. Brockie Stevenson, *Studio Lecturer in Art (Painting)*
- Charles Todd Stewart, Jr., *Professor of Economics*  
A.B. 1946, A.M. 1948, Ph.D. 1954, The George Washington University
- Robert Stewart, *Associate Professorial Lecturer in Botany*  
A.B. 1939, University of South Dakota; M.S. 1942, Ph.D. 1946, University of Maryland
- Thomas Dale Stewart, *Professorial Lecturer in Anatomy and Anthropology*  
A.B. 1927, The George Washington University; M.D. 1931, Johns Hopkins University
- Richard Engle Stockton, *Assistant Professor of English*  
A.B. 1951, Harvard University; A.M. 1953, Ph.D. 1954, Princeton University
- Eugene Almon Stone, *Assistant Professor of Mathematics*  
A.B. 1960, Vanderbilt University
- Joseph Novak Stonesifer, *Professorial Lecturer in Business Administration*  
B.S. 1936, University of Illinois; A.M. 1946, The George Washington University
- Hiram Miller Stout, *Professor of International Affairs; Acting Dean of the School of Public and International Affairs*  
A.B. 1926, DePauw University; A.M. 1931, Ph.D. 1934, Harvard University
- James Ashley Straw, *Assistant Professor of Pharmacology*  
B.S. 1958, Ph.D. 1963, University of Florida
- Karl Ernest Stromsem, *Professor of Public Administration*  
A.B. 1930, Pomona College; Ph.D. 1935, University of California
- Brunhild Irmgard Edelgard Stuerckow, *Assistant Professorial Lecturer in Physiology*  
Diploma of the Faculty of Science 1954, University of Giessen, West Germany; Doctor of the Faculty of Science, University of München, West Germany
- Margaret Sue Sullivan, *Assistant Professor of English*  
A.B. 1956, Ph.D. 1966, Duke University; A.M. 1961, Auburn University
- Rafael Supervía, *Professor of Spanish*  
Doctor en derecho 1927, Universities of Valencia and Madrid, Spain
- Jackwell Susman, *Assistant Professorial Lecturer in Sociology*  
B.S. 1957, University of Pittsburgh; A.M. 1961, The George Washington University
- Roland Henry Tanck, *Assistant Research Professor of Psychology*  
A.B. 1939, University of Wisconsin; A.M. 1948, Ph.D. 1956, The George Washington University
- Joseph Taney, *Studio Lecturer in Art (Advertising Design)*
- Marvin Jacob Taves, *Professorial Lecturer in Health Care Administration*  
A.B. 1945, Hamline University; Th.M. 1945, B.D. 1947, Bethel College and Seminary; A.M. 1952, Ph.D. 1954, University of Minnesota
- Douglas MacRae Taylor, *Visiting Professor of Anthropology*  
A.B. 1923, A.M. 1930, Cambridge University, England
- William Taylor, *Studio Lecturer in Art (Sculpture)*
- Geza Teleki, *Professor of Geology*  
Ph.D. 1936, University of Vienna, Austria
- \*Ira Rockwood Telford, *Professor of Anatomy*  
A.B. 1931, A.M. 1933, University of Utah; Ph.D. 1942, The George Washington University

\* On sabbatical leave spring semester 1967.



- Douglas Harold Teller, *Assistant Professor of Art; Curator of Art*  
A.B. 1956, Western Michigan University; M.F.A. 1962, The George Washington University
- Ralph Raymond Temple, *Associate Professorial Lecturer in Public Administration*  
A.B. 1927, City College, New York; J.D. 1930, A.M. 1940, Ph.D. 1942, New York University
- Arthur Terry, *Lecturer in Art (Advertising Design)*  
B.J. 1960, University of Missouri
- Emery Wilfred Tetrault, *Lecturer in Russian*  
A.B. 1952, Assumption College
- John Newell Tevis, *Assistant Professorial Lecturer in Physics*  
A.B. 1922, Washburn University of Topeka; A.M. 1928, University of Kansas
- Leslie This, *Assistant Professorial Lecturer in Business Administration*  
A.B. 1935, Baylor University; Th.B. 1937, Southern Baptist Theological Seminary
- Klaus Thoenelt, *Associate Professor of German*  
Staatsexamen 1956, Ph.D. 1961, University of Freiburg, Germany
- Mark Thomas, *Studio Lecturer in Applied Music (Flute)*
- Raymond Edward Thomas, *Assistant Professor of Statistics*  
A.B. 1955, A.M. 1957, The George Washington University
- Irene Thompson, *Instructor in Russian*  
B.S. 1965, Georgetown University
- James Lengerd Thompson, Jr., *Assistant Professor of Accounting*  
B.B.A. 1931, Texas Christian University; M.B.A. 1936, University of Texas; LL.B. 1940, Georgetown University; C.P.A. 1953, State of Texas
- \*Ronald Bettes Thompson, *Professor of European History*  
A.B. 1935, Yale University; Ph.D. 1954, University of Chicago
- William Dove Thompson, *Professorial Lecturer in Physical Education, Health, and Recreation for Men*  
A.B. 1930, A.M. 1935, The George Washington University; Ed.D. 1941, New York University
- Thomas Perry Thornton, *Associate Professorial Lecturer in International Affairs, Institute for Sino-Soviet Studies*  
A.B. 1950, Haverford College; Ph.D. 1953, Johns Hopkins University
- Clark Tibbitts, *Professorial Lecturer in Health Care Administration*  
B.S. 1924, Illinois Institute of Technology; Sc.D. 1957, Institutum Divi Thomae
- Charles Stanley Tidball, *Henry D. Fry Professor of Physiology*  
A.B. 1950, Wesleyan University; M.S. 1952, University of Rochester; Ph.D. 1955, University of Wisconsin; M.D. 1958, University of Chicago
- Mary Elizabeth Tidball, *Associate Research Professor of Physiology*  
A.B. 1951, Mount Holyoke College; M.S. 1955, Ph.D. 1959, University of Wisconsin
- Neil Tilkens, *Assistant Professorial Lecturer in Music*  
Mus.B. 1950, Columbia Union College; Mus.M. 1952, Philadelphia Conservatory of Music
- Laurence John Tilly, *Assistant Professor of Biology*  
B.S. 1952, Elmhurst College; M.S. 1953, University of Illinois; Ph.D. 1965, University of Iowa
- Edwin Timbers, *Professor of Public Administration; Director, Navy Graduate Financial Management Program*  
A.B. 1944, West Virginia University; A.M. 1951, Ph.D. 1954, University of Michigan
- Margaret Cooper Tolson, *Studio Lecturer in Applied Music (Piano)*  
Mus.B. 1931, Mus.M. 1936, University of Rochester
- William George Torpey, *Professorial Lecturer in Public Administration*  
A.B., A.M. 1935, State University of New York at Albany; Ph.D. 1941, New York University
- Carleton Raymond Treadwell, *Professor of Biochemistry*  
A.B. 1934, Battle Creek College; M.S. 1935, Ph.D. 1939, University of Michigan

\* On sabbatical leave spring semester 1967.



- Joseph Louis Tropea, *Instructor in Sociology*  
A.B. 1962, Wayne State University; A.M. 1965, Michigan State University
- Philip True, *Associate Professorial Lecturer in International Affairs, Institute for Sino-Soviet Studies*  
A.B. 1948, Western Michigan University; M.S. 1950, University of Chicago
- Clarke Freeman Trundle, *Assistant Professor of Education*  
A.B. in Ed. 1959, A.M. in Ed. 1962, Ed.D. 1965, The George Washington University
- Lawrence Rudolph Tucker, *Associate Professorial Lecturer in Physical Education, Health, and Recreation for Men*  
A.B. 1952, Bridgewater College; A.M. 1959, Ohio State University
- William Lewis Turner, *Associate Professor of English; Assistant Dean in Columbian College of Arts and Sciences*  
A.B. 1934, A.M. 1941, Ph.D. 1952, University of Pennsylvania
- Curtis Edward Tuthill, *Associate Professor of Psychology*  
A.B. 1935, Macalester College; A.M. 1936, Ph.D. 1939, University of Iowa
- James Twitty, *Studio Lecturer in Art (Painting)*
- Sidney Udenfriend, *Professorial Lecturer on Intermediary Metabolism*  
B.S. 1939, City College, New York; M.S. 1942, Ph.D. 1948, New York University
- Cecilia Noguera Uribe, *Instructor in Spanish*  
A.B. 1948, Normal Antioquena, Colombia
- Lawrence George Usiskin, *Instructor in Physical Education, Health, and Recreation for Men*  
B.S. in P.E. 1961, The George Washington University
- George Vartkes Vahouny, *Associate Professor of Biochemistry*  
B.S. 1953, M.S. 1955, Ph.D. 1958, The George Washington University
- Merle Glenn Van Dyke, *Assistant Professor of Special Education*  
A.B. 1957, Calvin College; A.M. 1958, Michigan State University
- Benjamin Douglass Van Evera, *Professor of Chemistry*  
B.S. 1923, Sc.D. 1952, Coe College; M.S. 1925, Iowa State University of Science and Technology; Ph.D. 1937, University of Iowa
- Robert Zeno Vause, *Associate Professor of Mathematics*  
B.S. 1943, University of South Carolina; A.M. 1947, Duke University; Ph.D. 1955, University of North Carolina
- \*Louis André Vigneras, *Professor of Romance Languages*  
A.B. 1921, A.M. 1922, Princeton University; Ph.D. 1934, Harvard University
- Robert Corbin Vincent, *Professor of Chemistry*  
A.B. 1935, A.M. 1937, Ph.D. 1940, Cornell University
- Mary Sanders Walden, *Lecturer in English*  
A.B. 1950, A.M. 1965, The George Washington University
- Richard David Walk, *Professor of Psychology*  
A.B. 1942, Princeton University; A.M. 1947, University of Iowa; A.M. 1949, Ph.D. 1951, Harvard University
- LuVerne Crabtree Walker, *Associate Professorial Lecturer in Education*  
A.B., B.Dip. in Ed. 1924, A.M. 1932, The George Washington University
- †Robert Harris Walker, Jr., *Professor of American Civilization*  
B.S. 1945, Northwestern University; A.M. 1950, Columbia University; Ph.D. 1955, University of Pennsylvania
- Dewey Wallace, Jr., *Associate Professor of Religion*  
A.B. 1957, Whitworth College; B.D. 1960, Princeton Theological Seminary; A.M. 1962, Princeton University
- John Patrick Walsh, *Professorial Lecturer in Education*  
B.S. 1939, State University of New York; M.S. 1948, Cornell University; Ed.D. 1958, The George Washington University

\* On sabbatical leave fall semester 1966-67.  
† On leave of absence spring semester 1967.



- Joseph Hart Walters, Jr., *Associate Professor of Business Administration*  
A.B. 1948, A.M. 1954, University of California; Ph.D. 1958, University of Pennsylvania
- George Ching Yuan Wang, *Assistant Professor of Chinese*  
A.B. 1951, Taiwan Normal University; M.S. 1955, Tokyo University of Education, Japan
- Martha Lou Ware, *Associate Professorial Lecturer in Education*  
A.B. 1951, LL.B. 1953, University of Texas; A.M. in Ed. 1961, The George Washington University
- Charles Warren, *Associate Professorial Lecturer in Journalism*
- Donald Stevenson Watson, *Professor of Economics*  
A.B. 1930, University of British Columbia; Ph.D. 1935, University of California
- Stephen Dell Webb, *Lecturer in Sociology*  
A.B. 1963, College of William and Mary
- Donald Joseph Weidman, *Assistant Professorial Lecturer in Business Administration*  
Ph.B. 1939, Lawrence College; M.B.A. 1957, The George Washington University
- Morris Aaron Weinberger, *Assistant Clinical Professor of Pathology*  
B.S. 1942, M.D. 1946, Tufts University
- Robert Louis Weintraub, *Professor of Botany*  
B.S. 1931, A.M. 1933, Ph.D. 1938, The George Washington University
- William P. Weiss, *Assistant Professor of Pharmacology*  
M.D. 1956, Columbia University
- Herbert Weissbach, *Special Lecturer on Vitamins*  
B.S. 1953, City College, New York; M.S. 1955, Ph.D. 1957, The George Washington University
- William Gaynor Wells, Jr., *Assistant Professorial Lecturer in Business Administration*  
B.S. 1947, University of Chicago; M.S. 1961, Purdue University
- Stuart Rudolph Westerlund, *Associate Professor of Education*  
A.B. 1956, Bob Jones University; A.M. 1958, Ed.D. 1963, Michigan State University
- David Gover White, *Professor of Chemistry*  
B.Ch.E. 1950, Cornell University; Ph.D. 1954, Harvard University
- Ralph Kirby White, *Professor of Social Psychology*  
A.B. 1929, Wesleyan University; Ph.D. 1937, Stanford University
- Richard Otis White, *Studio Lecturer in Music (Oboe)*  
Mus.B. 1950, Eastman School of Music
- Robert Raymond Vincent Wiederkehr, *Assistant Professorial Lecturer in Statistics*  
B.S. 1953, M.S. 1955, Ph.D. 1957, University of Illinois; M.S. 1964, Stanford University
- \*Norman Arthur Wiegmann, *Professor of Mathematics*  
A.B. 1941, University of Southern California; A.M. 1943, Ph.D. 1947, University of Wisconsin
- Marjorie Joan Williams, *Assistant Clinical Professor of Pathology*  
M.D. 1943, University of Bristol, England
- Robert Lee Williams, *Assistant Professor of Education; Assistant Dean of the Summer Sessions*  
B.S. in Ed. 1952, A.M. 1955, West Virginia University; Ed.D. 1964, The George Washington University
- Robert Crumpton Willson, *Associate Professor of Journalism*  
A.B. 1951, The George Washington University
- Theodore Winship, *Associate Clinical Professor of Pathology*  
A.B. 1931, M.D. 1937, University of Nebraska
- Maida Rust Withers, *Assistant Professor of Physical Education, Health, and Recreation for Women*  
A.B. 1958, Brigham Young University; M.S. 1960, University of Utah

\* On sabbatical leave spring semester 1967.



- William Wolfgang Wolman, *Professorial Lecturer in Statistics*  
B.B.A. 1946, City College, New York; A.M. 1949, Columbia University; Ph.D. 1960, University of Rochester
- Reuben Esselstyn Wood, *Professor of Chemistry*  
B.S. 1936, Ph.D. 1939, California Institute of Technology; M.S. 1937, University of Chicago
- Robert Dean Woodward, *Assistant Professorial Lecturer in Journalism*  
A.B. 1959, State University of South Dakota
- William Woodward, *Studio Lecturer in Art (Painting)*  
A.B. 1957, A.M. 1961, American University
- Samuel Nathaniel Wrenn, *Professor of Chemistry*  
A.B. 1927, A.M. 1929, Duke University; Ph.D. 1935, Pennsylvania State University
- Elizabeth Truman Wright, *Associate Professor of English Composition*  
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Jessie Bigelow Martin, A.B., *Editor of Academic Publications*



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SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS: Bachelor of Arts (A.B.), Certificate of the Institute for Sino-Soviet Studies (Cert. of I.S.S.S.), Master of Arts (A.M.), and Master of Science in International Affairs (M.S. in I.A.)

COLLEGE OF GENERAL STUDIES: Bachelor of Science in General Studies (B.S. in Gen.Std.) and Bachelor of Science in Geodetic and Cartographic Science (B.S. in Geod. and Cart.Sc.)



## THE GEORGE WASHINGTON UNIVERSITY

COLUMBIAN COLLEGE OF ARTS AND SCIENCES, 1821

THE GRADUATE SCHOOL OF ARTS AND SCIENCES, 1893

THE SCHOOL OF MEDICINE, 1825

THE NATIONAL LAW CENTER, 1865

THE SCHOOL OF ENGINEERING AND APPLIED SCIENCE, 1884

THE SCHOOL OF EDUCATION, 1907

THE SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION, 1928

THE SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS, 1928

THE COLLEGE OF GENERAL STUDIES, 1950

THE DIVISION OF UNIVERSITY STUDENTS, 1930

THE SUMMER SESSIONS, 1916

THE UNIVERSITY HOSPITAL, 1898



THE GEORGE WASHINGTON UNIVERSITY BULLETIN



SCHOOL  
OF  
MEDICINE

1968-1969



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Detailed information may be obtained by addressing inquiries as indicated below. For any information not included here, please write to the Office of Admissions. Mailing address for all University offices unless otherwise indicated is The George Washington University, Washington, D. C. 20006.

Information concerning courses of instruction, programs, and faculties of the several colleges and schools will be found in separate issues of the University Bulletin, which are listed on page 137. Zip code is essential for mailing catalogues.

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Education.....Dean of The School of Education  
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and Applied Science

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Dean of The School of Government and Business Administration  
International Affairs and Public Affairs.....Dean of

The School of Public and International Affairs

Law.....Dean of The National Law Center

School of Medicine.....1331 H Street, Washington, D.C. 20005

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Transcripts of Records.....Registrar

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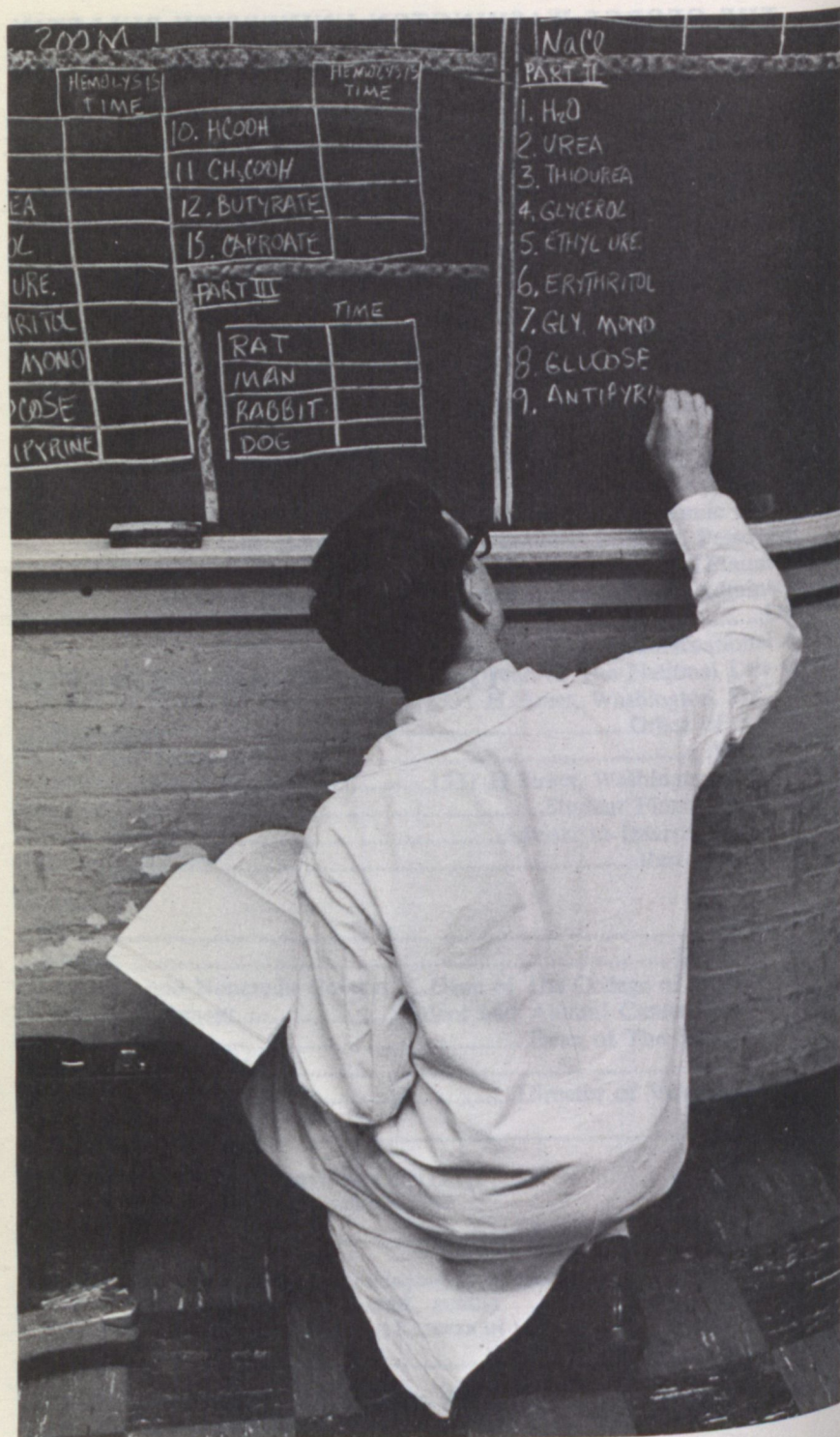
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**THE SCHOOL OF MEDICINE**

**1968-1969**

**WASHINGTON, D.C. 20005**







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## THE CALENDAR 1968-69\*

### 1968 FALL SEMESTER

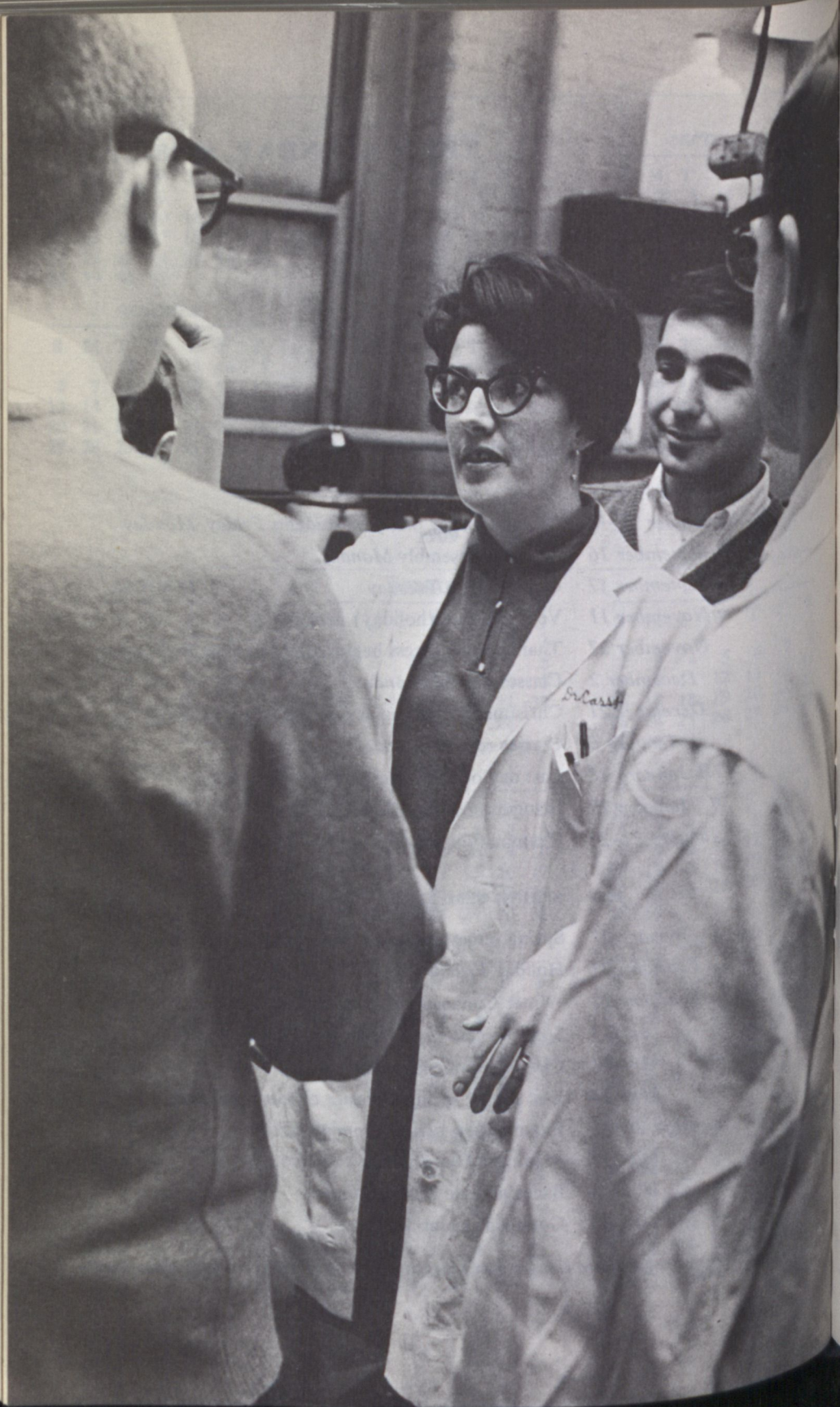
- September 12* Registration *Thursday*  
*September 13-16* Orientation for first-year students *Friday-Monday*  
*September 16* Opening Assembly *Monday*  
*September 17* Classes begin *Tuesday*  
*November 11* Veterans Day (holiday) *Monday*  
*November 27* Thanksgiving recess begins after last class *Wednesday*  
*December 2* Classes resume *Monday*  
*December 21* Christmas recess begins after last class *Saturday*  
*January 6* Classes resume *Monday*  
*January 18* Last day of fall-semester classes *Saturday*  
*January 20* Inauguration Day (holiday) *Monday*  
*January 21-25* Examination period *Tuesday-Saturday*

### 1969 SPRING SEMESTER

- January 27* Spring-semester classes begin *Monday*  
*February 21* Holiday *Friday*  
*February 22* Winter Convocation (holiday) *Saturday*  
*April 3* Spring recess begins after last class *Thursday*  
*April 7* Classes resume *Monday*  
*May 24* Last day of spring-semester classes *Saturday*  
*May 26-31* Examination period *Monday-Saturday*  
*May 30* Memorial Day (holiday) *Friday*  
*June 8* Baccalaureate Service *Sunday*  
*June 8* Commencement *Sunday*

\* The examination schedule and semester breaks do not apply to third- and fourth-year students. See *Special Schedule*.







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Associate Deans of the Medical Center C.B. Ethridge,  
A.M. Griffin, F.N. Miller, Jr.

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\* The Faculty, Executive Faculty, Dean's Council, and committee members are for the academic year 1967-68.

The President of the University, the Vice President for Academic Affairs, the Registrar of the University, and the Director of Admissions of the University are ex officio members of the Faculty and the Executive Faculty.



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*Assistant Professors* Alice Altstatt, J.M. Bacos, J.S. Bailey (*Research*), K.L. Becker, Joan Blanchette, A.S. Brecher, Juan Calatayud, Marie Cassidy, T.K. Chowdhury, Yang-Ming Chu (*Research*), R.M. Coleman, Leon Cytryn, Elma Denham, C.G. Duarte (*Research*), Mervyn Elgart, G.M. Fenichel, J.D. Finkelstein (*Research*), D.S. Friendly, Whei-Rung Fu, A.S. Gooch, P.A. Gorman, Richard Granke, H.M. Grigorian, G.A. Hahn (*Research*), Allan Hall, Perry Hookman, Wellington Hung, M.J. Jackson, F.S. Jannotta, W.R. Jondorf (*Research*), H.E. Kaiser, S.G. Kent, Philip Klubes (*Research*), M.E. Landay, J.R. Lilly, Emanuele Mannarino, A.E. Marans, W.B. McAvoy, J.E. McClenathan, Ruth McKay, G.A. Morales, Nasser Movassaghi, Stephen Oroszlan (*Research*), Helen Percy, F.A. Peck, Arthur Peschin, J.R. Puig, Melvin Reich, C.A. Rigg, P.E. Shorb, Jr., L.W. Stanton, Elizabeth Stephenson, J.A. Straw, N.T. Tsangaris, H.A. Urweider, Benny Waxman, Harold Weiss, W.P. Weiss, William Whitmore, Jr., Karl Wipplinger, G.L. Wright, Jr.

*Assistant Clinical Professor* J.L. Levine

*Instructors* R.P. Altman, W.R. Ayers (*Research*), Ann Barnet, Mary Bazelon, W.B. Berry, E.R. Burns (*Research*), C.H. Chan, Ronald Fishman, M.J. Garcia, W.S. Gilbert, E.D. Hendler, H.M. Hochberg (*Research*), C.B. Jacobson, B.F. Johnson (*Research*), J.L. Marlow, J.F. Mermel, A.L. Moede, Karin Nelson, C.H. Oliver, Jr., M.N. Ozer, J.C. Rios, W.P. Tunell, Boris Vlalukin, C.W. Wesselhoeft, Jr., Ching-Hui Wu (*Research*), Hildegard Manitsas

*Administrator of the University Hospital and Clinics* V.F. Ludewig

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*Associate Professors* B.S. Fine, B.W. Smith

*Associate Clinical Professor* J.J. McFarland, Jr.

*Assistant Clinical Professor* J.L. Levine

*Administrator of the University Hospital and Clinics* V.F. Ludewig

\* The Dean and Associate Deans of the Medical Center and the Administrator of the University Hospital and Clinics are ex officio members of the Dean's Council.



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\*The Dean and Associate Deans of the Medical Center and the Administrator of the University  
Hospital and Clinics are ex officio members of all committees.



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## General Information

THE SCHOOL OF MEDICINE OF THE GEORGE WASHINGTON UNIVERSITY has a distinguished history that goes back more than a century. In March 1825 the School opened with the intention of building "a medical school commensurate with the progress and demands of a rising metropolis, and the improvement of service throughout the country." The School of Medicine, the eleventh oldest in the country, has met this responsibility by providing its students with a foundation in the medical sciences upon which they have built medical careers in practice, teaching, research, or administration.

In 1844, the School took on a new dimension when Congress granted it the use of the Washington Infirmary. Thus one of the earliest general teaching hospitals in the Nation was established in Washington.

At the turn of the century the School was located at its present site—in the center of Washington—close to world-renowned library facilities, comprehensive government medical museums, and numerous federal medical research and scientific establishments.

The distinguished history of The George Washington University School of Medicine closely parallels academic advances and medical progress of the Nation. The School has contributed to both.

The George Washington University Medical Center, established in 1966, consists of the School of Medicine; the University Hospital, Clinic, and Cancer Clinic; and affiliated hospitals.

### OBJECTIVES

The purpose of the School of Medicine is to prepare men and women in the art and science of medicine to meet the health needs of a growing, ever-changing society. It is the responsibility of the School to provide its students with a systematic plan of instruction in the basic medical sciences, with well-guided clinical experience, with opportunities for expression in research, and with a philosophy in keeping with the highest ethics of the profession.

To carry out its program, the School maintains a well qualified faculty and makes use of facilities which provide exceptional opportunities for research and clinical training in the Washington metropolitan area.

### PLAN OF INSTRUCTION

The Faculty and Administration of the School of Medicine have developed and initiated a program of medical education through careful study of past performance, present opportunity, and future need.

Students differ widely in their interests and abilities. Each student is encouraged to maximal achievement within his own limits. This is accomplished by a balanced program of required and elective courses that permit individual scholarly development in specialized medical sciences and research.

The curriculum provides graduated instruction, beginning with the basic medical sciences and expanding to include the more complex aspects of health maintenance and care of the sick. It provides a broad basic preparation for a career in medicine.



In the first year, the schedule begins with an orientation period designed to introduce the new students to the Faculty, the upperclassmen, and the environment for their medical education.

The first semester is devoted to the study of the sciences (anatomy and biochemistry) concerned with the structure and composition of the normal human body. In the second semester of the first year, the science of normal function is further emphasized by courses in physiology. These studies of the normal provide a basis for the emphasis on health maintenance, which is a strong positive characteristic of the University's new teaching program. During the second semester the student is also introduced to the concept of disease in a course in microbiology, where the various microbial agents and their effects upon the human body are studied. Elective courses are offered in the second semester of the first year and provide an opportunity for the student to begin the development of special interests under the guidance of skilled advisers.

The basic courses of the first semester of the second year are pathology and pharmacology. In the former the student learns the nature and causes of disease as well as the alterations produced by disease in the tissues and fluids of the human body. He learns to recognize and evaluate the significance of the abnormal. Pharmacology provides an understanding of the mode of action of the various agents employed in the treatment of the sick, and emphasizes the safest and most effective means for their use. Opportunities for elective study are increased during the second year.

The second semester of the second year and the first semester of the third year are planned to acquaint the student with the principles and methods of clinical diagnosis and therapy, and to develop in him an awareness of the physician's responsibility to his patients. The basic concepts of laboratory medicine are taught in special laboratory facilities. During the second semester of the second year, two and a half days are available each week for electives.

The fall semester of the third year provides the student with his first responsibility for patient care. In the Continuing Care Program, each student is assigned several patients for study in depth, including an evaluation of family, home, and community as they may contribute to the illness or to recovery. This program is decentralized so that the student can become familiar with community health resources in an area near his own home. Preceptors provide close personal supervision of all aspects of the project.

In addition to the Continuing Care Program, lectures and demonstrations provide additional background in theory and principles for the clinical experiences which will follow. Of special significance is the series called "Major Clinical Situations," in which the students are presented with simulated clinical problems and participate in their solution.

During the final 16 months of the curriculum, each student has a 12-month clinical clerkship assignment in the University Hospital and Clinic and in affiliated hospitals. Patients with a wide variety of illnesses are assigned to each student for close personal study under the guidance of a faculty skilled in the various specialties of medical practice. In the course of the clerkship, the student is given increasing responsibility as he demonstrates competence and professional maturity.

During an 8-week elective period, each student has an opportunity to explore general practice, specialty practice, or areas of research which may be of help in deciding the direction of his career. Students with exceptional interests and



proven ability may be permitted to spend their elective period in other universities, including those of foreign countries, but most students will find ample opportunities in the University's own published schedule of approximately 150 different electives for upperclassmen.

## CURRICULUM

### A. The Basic Medical Sciences

FIRST YEAR	TERM I (16 weeks)
	TERM II (16 weeks)

(16-week vacation)

SECOND YEAR	TERM III (16 weeks)
	TERM IV (16 weeks)

(16-week vacation)

THIRD AND FOURTH YEARS (the last 72 weeks in rotation, including 8-week vacation)	TERM V (14 weeks)
	CLINICAL CLERKSHIPS (56 weeks)
	ELECTIVES (8 weeks)

#### ANATOMY AND BIOCHEMISTRY

PHYSIOLOGY AND MICROBIOLOGY  
plus 4 semester-hour credits of electives in Anatomy and Biochemistry

#### PATHOLOGY AND PHARMACOLOGY

plus 6 semester-hour credits of electives in Physiology and Microbiology

### B. The Intermediate Terms

PHYSICAL DIAGNOSIS, LABORATORY MEDICINE, PSYCHIATRY, INTRODUCTORY CLINICAL LECTURES  
plus 6 semester-hour credits of electives in Pathology, Pharmacology, and others

#### MAJOR CLINICAL SITUATIONS, CONTINUING CARE PROGRAM, LECTURES IN CLINICAL SUBSPECIALTIES

plus 3 semester-hour credits of electives in Psychiatry, Hematology, Nutrition, Metabolism, etc.

### C. Patient Care

#### INPATIENT CLERKSHIPS:

Psychiatry (4 weeks), Medicine (12 weeks), Surgery (12 weeks), Obstetrics and Gynecology (8 weeks), Pediatrics (8 weeks)

#### OUTPATIENT CLERKSHIPS:

General Medicine and Medical Specialties (8 weeks), Emergency Room (4 weeks)

### D. Career Electives

SUPPLEMENTARY CLINICAL CLERKSHIPS OR BASIC SCIENCE OR CLINICAL RESEARCH

## DEGREES

The four-year program of the School of Medicine, described above, leads to the degree of Doctor of Medicine.

In cooperation with Columbian College of Arts and Sciences, a seven-year curriculum leading to the combined degrees of Bachelor of Arts and Doctor of Medicine is offered. In cooperation with the Graduate School of Arts and Sci-



ences a program leading to the combined degrees of Master of Science and Doctor of Medicine is offered.

The basic science departments of the School of Medicine cooperate with the Graduate School of Arts and Sciences in offering the degree of Master of Science in the fields of anatomy, biochemistry, microbiology, pharmacology, and physiology; and in directing the research of candidates for the degree of Doctor of Philosophy in more than fifty fields of the medical sciences.

### EQUIPMENT AND FACILITIES

Facilities for the School of Medicine are located at 1331, 1335, 1337, and 1339 H Street, N.W., in downtown Washington.

*Administrative Offices.*—The administrative offices of the School, 1331 H Street, consist of the offices of the Dean of the Medical Center, Medical Admissions, Research Administration, Public Relations, and the Medical Alumni Association.

*Medical School Buildings.*—In the buildings housing the School of Medicine, 1335 and 1337 H Street, there are lecture rooms, classrooms, students' rooms, and the following laboratories: anatomy, biochemistry, microbiology, pathology, pharmacology, and physiology. The laboratories are fully equipped to enable students to pursue adequately the laboratory courses and to acquire the technical skill necessary in modern clinical and investigative work.

*Research Building.*—The Research Building, 1339 H Street, houses special laboratories for graduate and staff research in the departments of Anatomy, Biochemistry, Microbiology, Pharmacology, and Physiology. Special facilities are provided for the study of radioactive compounds, for tissue-culture techniques, and for virologic procedures. Qualified students are invited to participate in certain aspects of the research program either on a volunteer basis or with the support of special Research Scholarships.

*Teaching Aids.*—This administrative unit of the School of Medicine directs the activities of the following service functions: Medical Illustration and Photography, Audio-visual Facilities, and Xerox Duplication.

*Medical Library.*—The Medical Library, in well-equipped quarters on the first floor of 1339 H Street, N.W., contains 34,500 carefully selected volumes, including the new medical works and the principal medical journals.

Interlibrary loan service is maintained with other medical and scientific libraries.

The Medical Library is open from 8:30 a.m. to 10 p.m. each class day, Monday through Friday; from 8:30 a.m. to 5 p.m. Saturday; and from 12 noon to 5 p.m. Sunday.

A branch of the Medical Library is maintained in the University Hospital for the use of the resident physicians, interns, and students. It is open Monday through Friday, from 9 a.m. to 5 p.m. and 6 to 11 p.m. During the academic year the library is also open Saturday and Sunday from 1 to 5 p.m.

*The George Washington University Hospital.*—This 550-bed hospital is staffed and directed by the Faculty of The George Washington University School of Medicine. It provides excellent clinical opportunity for the instruction of medical students. Specialties in the fields of medicine and surgery have assigned space and equipment for the diagnosis and care of ambulatory and hospital patients.



## GOVERNMENT MUSEUMS

The Armed Forces Institute of Pathology, on the grounds of Walter Reed Army Medical Center, affords unexcelled opportunity for study of conditions met in general medicine and surgery as well as those of special military significance. Its collection of anatomical and pathological specimens comprises material received from all areas of the world and is unequalled in this country. The Museum of Hygiene, the National Museum, the Smithsonian Institution, the Botanic Gardens, and the various collections of the Department of Agriculture all afford opportunity for study of materials of special interest in various areas of medicine and its allied sciences.

## CLINICAL FACILITIES

Students at The George Washington University School of Medicine receive clinical training at the University Hospital, at the University Clinic, at the University Cancer Clinic, and at affiliated hospitals.

*The George Washington University Hospital.*—The Medical Director and Chiefs of Services are responsible for the supervision of patient care. Under guidance, the individual student has direct responsibility to patients. Clinical conferences are held in which the history of patients, laboratory records, and the physical and pathological findings are presented and correlated.

The Meyer Pavilion, a new addition, has greatly enriched the facilities of the University Hospital by making available new monitored operating rooms; a clinical research unit; a radioisotope laboratory; and radiotherapy facilities, which include a linear accelerator.

*The University Clinic.*—The University Clinic has facilities for each Service in the Hospital. Students are assigned in rotation by section for instruction in the University Clinic.

*The George Washington University Cancer Clinic.*—The Helen L. and Mary E. Warwick Memorial Building houses the Cancer Detection Clinic and special laboratories for research related to the nature, diagnosis, and treatment of cancer.

The facilities of the Cancer Detection Clinic are used for teaching medical students. The diagnosis and treatment of various forms of neoplasms are presented. The results of treatment are evaluated by follow-up studies.

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*Children's Hospital.*—This is one of the largest and best known hospitals for children in the United States. Medical students receive training and clinical experience in pediatrics on both clinic and inpatient services. Special lectures and clinical work in child psychiatry are given in Children's Hospital.

*Columbia Hospital for Women.*—This 150-bed hospital, situated only two blocks from the University Hospital, is utilized by medical students at The George Washington University for clinical training in obstetrics and gynecology. Each year about 10,000 patients are admitted, and there are 12,000 outpatient visits. Almost 5,000 deliveries and 4,500 gynecological operations are performed annually. Columbia Hospital for Women is an affiliated hospital for residency training in Obstetrics and Gynecology in The George Washington University Medical Center Program.



*District of Columbia General Hospital.*—The District of Columbia General Hospital, one of the largest general hospitals in the country, is a teaching facility for students in the School of Medicine.

The hospital has a bed capacity of approximately 1,200. It is the principal facility for the care of the indigent sick of the community. Annually, the outpatient department has over 160,000 clinical visits; approximately 58,000 patients register in the emergency room, and 22,500 are admitted to the hospital. This is the largest emergency service in the District, and a great variety of acute medical and surgical problems are examined and treated.

*Fairfax Hospital.*—This new and already expanding 300-bed voluntary community teaching hospital serves a burgeoning suburban area and provides all clinical services including psychiatry. Each year over 14,000 patients are admitted, 3,400 babies delivered, 8,000 surgical operations performed, and 27,000 persons examined and treated in the Emergency Suite. Fairfax Hospital offers a rotating internship program, a School of Medical Technology, and clinical facilities for a School of Practical Nursing. Students of the School of Medicine serve at this hospital in clinical clerkship, continuing care, and elective programs. Fairfax Hospital is an affiliated hospital for residency training in Medicine, Surgery, and Obstetrics and Gynecology in The George Washington University Medical Center Program.

*St. Elizabeths Hospital.*—St. Elizabeths Hospital, established by an act of Congress in 1855, is a federal psychiatric hospital administered under the Department of Health, Education, and Welfare. This hospital provides for the treatment, care, and general well-being of approximately 7,500 patients of whom 5,900 are resident. The facility includes a completely approved General Hospital to meet the needs for medical and surgical care and functions with a full-time staff within the hospital plus attending physicians in various specialties. The hospital maintains an up-to-date medical library.

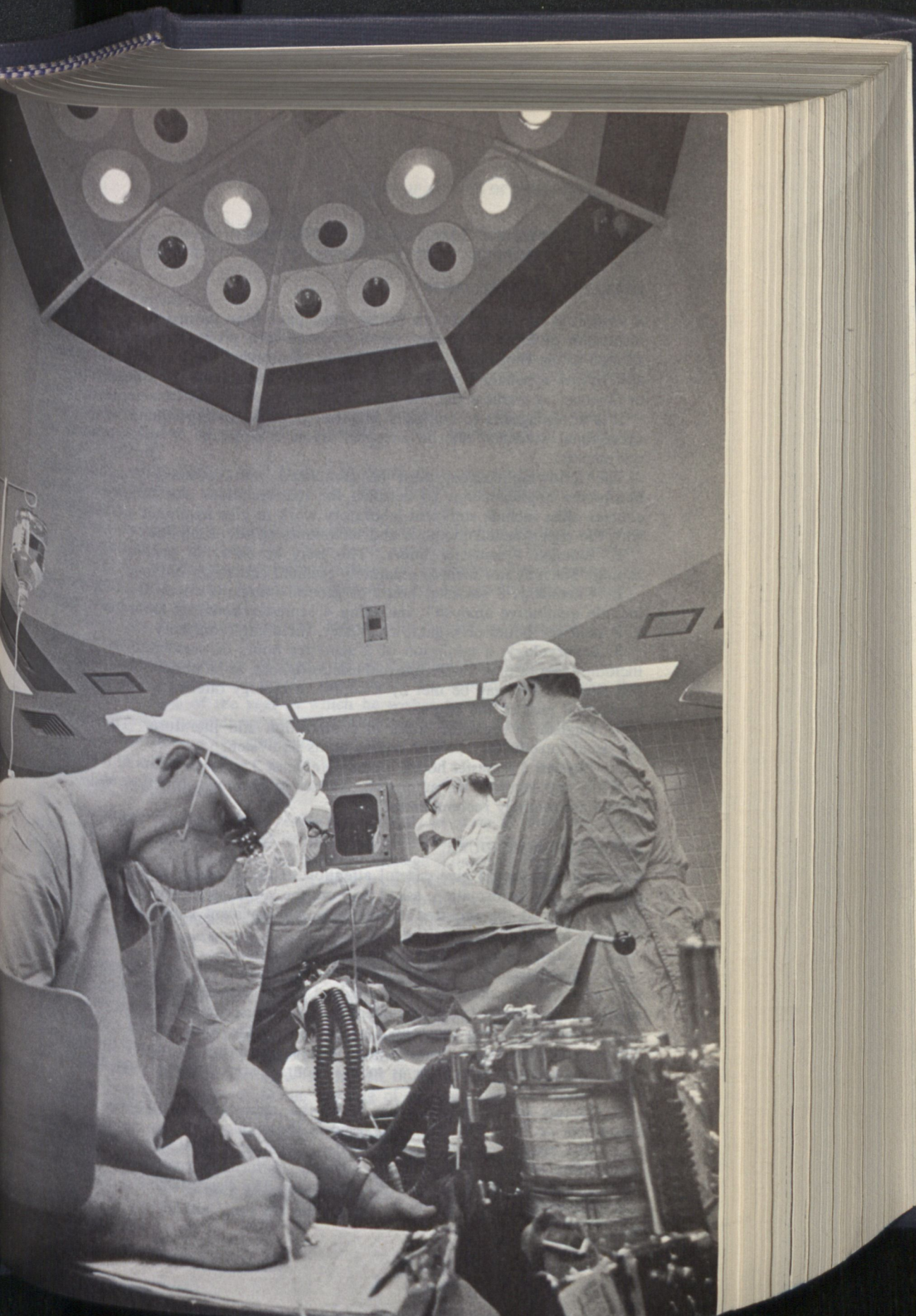
Medical students of The George Washington University utilize the facilities of St. Elizabeths for clinical psychiatric training. Opportunities for research are enhanced by a cooperative arrangement with the National Institute of Mental Health of the United States Public Health Service.

*Veterans Administration Hospital.*—This new 700-bed hospital, which replaces the Mt. Alto Veterans Administration Hospital and the Veterans Administration Outpatient Clinic, was opened in May, 1965.

In addition to the medical, surgical, psychiatric, neurological, tubercular, and physical medicine and rehabilitation services, there are a large outpatient program; an extensive medical research program; programs in open heart surgery, cobalt therapy, and renal dialysis; a metabolic program; and a specially designed Administrative Research Laboratory.

*Washington Hospital Center.*—Opened in 1958, this 813-bed private, voluntary institution serves the greater Washington area through a triad of activities: patient care, teaching, and research. The Center is the tenth busiest of more than 7,000 hospitals in the United States and the second busiest private hospital in terms of inpatient admissions. A very active emergency service cares for more than 40,000 patients a year, and the 36 clinics provide all major clinical service except pediatrics for about 100,000 outpatients yearly. In addition to an extensive approved internship and residency program, the Center offers organized instruction for nurses, laboratory and X-ray technicians, medical secretaries, and other health-related vocations.







## The Degree of Doctor of Medicine

### ENTRANCE REQUIREMENTS

A MINIMUM OF 90 SEMESTER HOURS must have been earned in an accredited institution of higher learning. Credits earned in a professional school can be applied to the fulfillment of this minimum requirement only if they are acceptable by the applicant's college or university toward a Bachelor's degree in Arts or Science. A credit under the quarter system is two-thirds of a semester hour.

It is advantageous to complete four full years of undergraduate work. Only exceptional students can be accepted upon completion of the minimal requirements.

The following courses must be completed with satisfactory achievement before the applicant can be certified for matriculation. All required science courses must include sufficient laboratory work to give assurance of familiarity with the experimental methods and techniques of the disciplines.

1. **Biology:** 8 semester hours. This may be either in general biology or zoology but may *not* include separately credited courses in botany.

2. **Chemistry:** 8 semester hours of general inorganic chemistry (which may include qualitative analysis), including 4 semester hours of laboratory; and 6 to 8 semester hours of organic chemistry, including laboratory.

3. **Embryology:** a minimum of 2 semester hours of vertebrate embryology, including laboratory. Under unusual circumstances, to be individually evaluated, this requirement may be met by a course in biology offering embryology as a substantial part of the course.

4. **English:** 6 semester hours in composition and literature. This may be the usual introductory college course or its equivalent.

5. **Physics:** 8 semester hours, including at least 2 semester hours of laboratory.

While not required for admission, courses in histology, genetics, and mathematics are strongly recommended.

### ADMISSION PROCEDURE

The applicant should give careful attention to the entrance requirements, supplying all the information asked for on the application and furnishing the School with all the required credentials. An applicant cannot be considered until the following are received:

1. A fully completed *Application for Admission*.
2. Official transcripts of record from the registrar of *each* college, university, professional school, or other medical school attended—including summer sessions. Inclusion of transferred credits on a transcript will *not* serve in place of the transcript from the school where the credits were earned. Applicants currently in attendance should request official transcripts of record to date and send *supplemental transcripts* as soon as courses are completed and grades are recorded.

3. Letters of recommendation from the applicant's premedical advisory committee or from the references given in the application.

4. The results of the Medical College Admission Test, sponsored by the Association of American Medical Colleges. (Information concerning this test may be obtained from premedical advisers or The Psychological Corporation, 304 East 45th Street, New York, N.Y. 10017.)



5. A check or money order made out to The George Washington University in the amount of \$25 to cover the cost of evaluating credentials.

#### ADVANCED STANDING

The School of Medicine's curriculum is such that admission with advanced standing is ordinarily limited to the third year. Applicants for admission to the second year will be considered in exceptional circumstances. The applicant must:

1. Be or have been a regularly registered student in a school of medicine which is a member or an affiliate member of the Association of American Medical Colleges.
2. Be in good standing and eligible to continue in the school where he is currently enrolled, or eligible to re-enter that school if his education has been interrupted.
3. Have completed a course of study at least equivalent to that required for advancement to the year for which he is applying had he been a student in The George Washington University School of Medicine. For admission to the second year, he must have completed all work in anatomy, biochemistry, microbiology, and physiology.
4. Have the endorsement of the dean of his school of medicine or his authorized delegate.
5. Pass each examination of Part I of the National Board Examinations if he is applying for admission to the third year. He should plan to take the examination in June of the year in which he wishes to enter.

The application procedures are otherwise the same as those given under the general instructions for admission.

#### SELECTION PROCEDURES

The Committee on Admissions reviews credentials as soon as they are complete. The Committee is guided in the selection of students by the applicant's academic ability, the results of the Medical College Admission Test, and personal qualifications as determined by letters of reference and personal interview. Applicants are interviewed regionally or locally on invitation by the Committee. The applicant who is invited to an interview should make every effort to keep the appointment or let the School know promptly if another arrangement must be made. The interviewer's report is an essential part of the applicant's record. The Committee on Admissions will not make a final recommendation until it has been received.

Each applicant is notified of the Committee's decision as soon as possible.

An applicant who is offered a place in a class is required, within two weeks, to notify the Office of Admissions of the School of Medicine of his intent to accept the place reserved for him. A deposit of \$100 must be remitted not later than January 15th prior to the opening of classes of the academic year for which he applied. This deposit will not be refunded after January 15th. It will be credited toward the tuition for the first semester.

Accompanying the offer of a place in class will be forms for a report on physical condition. This report must be completed and returned to the Office of Admissions of the School of Medicine by the student's physician within two months of receipt of the letter of acceptance.



All questions related to admissions, requests for applications, or the mailing of applications and credentials should be addressed to: Office of Admissions, The George Washington University School of Medicine, 1331 H Street, N.W., Washington, D.C. 20005.

### REGISTRATION

For the fall semester of the academic year 1968-69, registration will be conducted at the University Gymnasium, 2010 H Street, N.W., from 10 a.m. to 4 p.m., September 12. The time and place of registration for the spring semester, and the summer session of third-year clerkships, will be announced.

### FEES AND FINANCIAL REGULATIONS

The following fees have been established for the academic year 1968-69. (See page 21 for projected tuition increases for 1969-71.)

Application fee	\$25
Tuition fee, for each academic year	\$1,875
Fee for special examinations, for each subject	\$5
Continuous Registration fee, charged each student granted "leave of absence" status for the academic year in the School of Medicine	\$60
Graduation fee	\$25

### PAYMENT OF FEES

The annual fee of \$1,875 is payable at the rate of \$937.50 on or before registration day for each semester. Students registered for the summer session of third-year clerkships will be on "continuous registration" without charge until the following fall semester.

All fees are payable at the Office of the Cashier of the University, except as some other arrangement may be announced. The Student Accounts Office has responsibility for creating, billing, and maintaining student accounts resulting from tuition and room and board charges. While tuition is due and payable in full as described above, a student may sign a contract with this office at the time of registration permitting him to pay one-half of the semester fee at the time of registration and the remaining half on or before November 6, 1968, for the fall semester and March 19, 1969, for the spring semester. A service fee of \$5 is charged for the use of this deferred payment plan. The University will not obligate itself to notify the student, in advance, of the payment-due date for the second half of the semester charges. Students who fail to make any payment when due will be automatically suspended. They may not attend classes until they have paid all accrued fees and a \$10 reinstatement fee and have been officially reinstated by the Student Accounts Office. Applications for reinstatement are to be made to the Student Accounts Office.

After a student has entered the course of instruction he is obligated for the tuition for the full semester. A student registered for the clerkships of the summer session is obligated for tuition due at the time of registration for the following fall semester, except that in the case of withdrawal or leave of absence a *pro rata* payment will become due immediately.

Acceptance by the University of a student's fees does not in any way obligate the School of Medicine to accept the student for any subsequent semester



or summer session, and the right is reserved to require the withdrawal of any student whenever, in the interest of the student or the School, the Faculty deems it advisable to do so.

#### PROJECTED TUITION INCREASES FOR 1969-71

Academic year tuition increases have been estimated as follows: 1969-70, \$75; 1970-71, \$50. It is not possible to project future economic data with certainty; however, barring unforeseen developments, these tuition increases will be followed.

#### COST OF TEXTBOOKS AND STUDENT EQUIPMENT

The minimum cost of necessary textbooks and student equipment (microscope, drawing materials, glass slides, clinical thermometer, stethoscope, hemocytometer, uniforms, etc.) is approximately as follows: first year, \$600; second year, \$300; third year, \$150; and fourth year, \$100. Microscopes must be provided by the student. Rentals are not available.

Because many parents may wish some option in meeting and financing all or part of the cost of a college education, the University offers educational loan plans through the Girard Trust Exchange Bank, Philadelphia, Pa.; Funds for Education, Inc., Manchester, N.H.; and The Riggs National Bank, Washington, D.C.

Although similar in purpose, these plans vary somewhat in coverage and conditions. One-year and multiple-year plans are available. Insurance covering the life and health of the sponsor is provided through these plans.

Individuals over twenty-one years of age who are employed full-time are also eligible to apply. They may sponsor their own contracts, provided they meet the conditions specified by the plan for which they are applying.

Brochures and applications describing these plans are available in the Office of Student Financial Aid, The George Washington University, Washington, D.C. 20006.

### DEGREE REQUIREMENTS

#### DOCTOR OF MEDICINE

Every candidate for graduation with the degree of Doctor of Medicine must have satisfactorily completed the requirements of the School of Medicine as described under "Plan of Instruction" on pages 11-13, including not less than four academic years of study as a matriculated student in Medicine. He must have completed all required courses and passed satisfactorily all prescribed examinations.

#### HONORS

A candidate who has completed the four-year medical course with a quality-point index of 3.50 or above may be recommended by the Faculty for graduation "with distinction."



**COMBINED BACHELOR OF ARTS AND DOCTOR OF MEDICINE**

In order to be recommended for the degree of Bachelor of Arts, the candidate must complete at least 94 semester hours of prescribed college work (at least 30 hours and one year of residence must be completed in Columbian College of Arts and Sciences) and the first year of the medical curriculum. Upon satisfactory completion of the fourth year of the medical curriculum the student becomes eligible for the degree of Doctor of Medicine.

**COMBINED MASTER OF SCIENCE AND DOCTOR OF MEDICINE**

Students in the School who wish to apply for the combined degrees of Master of Science and Doctor of Medicine must meet the requirements for admission to the Graduate School of Arts and Sciences. They must be recommended by the chairman of the department and by the deans of the Graduate School of Arts and Sciences and the School of Medicine.

The Master of Science program consists of a minimum of 30 semester hours of credit. A maximum of 12 semester hours of credit for graduate level courses completed as a part of the medical curriculum (and not already applied toward the Bachelor's degree) will be allowed in fulfillment of the requirements of the Master of Science degree.

**MASTER OF SCIENCE AND DOCTOR OF PHILOSOPHY**

The requirements for the degrees of Master of Science and Doctor of Philosophy are stated in the Undergraduate and Graduate Catalogue of the University, which is available at the Office of Admissions, The George Washington University, Washington, D.C. 20006.

**FINANCIAL AID****FELLOWSHIPS AND SCHOLARSHIPS**

The following fellowships and scholarships are limited to students in the School of Medicine. Unless otherwise specified, inquiries should be directed to the Dean of the Medical Center, 1331 H Street, N.W., The George Washington University, Washington, D.C. 20005.

**FELLOWSHIPS**

*Wilbur J. and Edith K. Carr Memorial Fellowship Fund (1965).*—By bequest of Edith K. Carr, former Trustee of the University. The income from this fund provides fellowships in surgery, medicine, or medical research at The George Washington University Hospital.

*Samuel Jordan Graham Fellowship in Surgery (1961).*—By bequest, in memory of Judge and Mrs. Graham. The income from this fund, up to \$2,000, may be used to assist students who are pursuing postgraduate study or research, preferably in surgery, at the School of Medicine.

If no individual is conducting such work or deserving of the award, the income may be used to provide one or more scholarships (to cover tuition and other school expenses deemed appropriate) for undergraduate students in the



School of Medicine. Application should be filed with the Chairman of the Department of Surgery not later than March 1.

*Robin Miller Research Fellowship (1953).*—A \$3,000 fellowship established by bequest of Mrs. Robin Miller for the study of cardiovascular diseases.

*Henry Rau Foundation Student Fellowship Grant (1967).*—Awarded annually to a student in the School of Medicine for research in cancer and allied diseases at The George Washington University Cancer Clinic.

*U.S. Public Health Service Training Grants.*—Information concerning training grants in fields of the medical sciences is available at the Office of the Dean of the Medical Center.

#### SCHOLARSHIPS

Scholarships awarded to students in the School of Medicine are credited for the academic year unless otherwise specified. Each holder must carry a full schedule of academic work during the period for which the scholarship is awarded. Applicants should apply on prescribed forms which must be filed in the Office of the Dean of the Medical Center, 1331 H Street, N.W., Washington, D.C. 20005, not later than April 1 preceding the academic year for which the scholarship is to be awarded.

*Anna Bartsch Hospital Intern Scholarship (1946).*—A partial scholarship established by Dr. Anna Bartsch-Dunne as a memorial to her mother. Awarded to a woman intern in the University Hospital.

*Anna Bartsch Medical Student Scholarship (1946).*—A partial scholarship established by Dr. Anna Bartsch-Dunne as a memorial to her mother. Awarded to a woman in the School of Medicine "of outstanding scholarship, character, and promise, who intends to make the practice of medicine her life profession."

*Jack I. Bender Scholarship (1967).*—Established by the family of Jack I. Bender as a memorial to their father. Awarded annually to students in the School of Medicine on the basis of academic performance and need.

*Everett Lamont Bradley Scholarship (1954).*—A partial scholarship, by bequest of Alice R. H. Bradley in memory of her son, for a student in the School of Medicine.

*Dr. Edith Seville Coale Scholarships (1965).*—Provided at the request of Dr. Coale for women in the School of Medicine. The scholarships are administered by the Zonta Club of Washington.

*Joseph Collins Foundation Scholarships.*—Available to medical school students upon application through the Office of the Dean.

*The George Washington University Medical Alumni Scholarship (1965).*—One \$1,000 scholarship awarded to a student in each of the four classes of the School of Medicine, on the basis of financial need and scholarship.

*Health Professions Scholarship Program (1966).*—Awarded by the School of Medicine to students who qualify under the provisions of Public Law 89-920. Inquiries should be directed to the Dean of the Medical Center.

*Robert Woods Johnson Scholarship Fund.*—Available to medical students upon application through the Office of the Dean.

*Ki-Wives of Washington Scholarship Fund (1963).*—A tuition scholarship available to a student or students in the School of Medicine.

*Medical Research Scholarships and Traineeships.*—For student participation in the research programs of the School of Medicine or special training in research methods. Research scholarships are ordinarily awarded for full-time



activity during the summer months; research traineeships support part-time work during the academic year. Scholars are "matched" with members of the faculty in accordance with their mutual interests. Trainees are designated by the departments responsible for the programs. These programs have been sponsored by the National Institutes of Health, the National Foundation, Lederle Laboratories, and Council for Tobacco Research U.S.A. In addition a number of research scholarships have been made available through the Washington Heart Association.

*Chas. Pfizer Medical Scholarship Program (1962).*—Established to financially assist a student in the School of Medicine.

*Phi Delta Epsilon Scholarship (1965).*—Awarded annually to an undergraduate member of Phi Delta Epsilon for scholarship, leadership, and service.

*David Perry Steinman Memorial Scholarship Fund (1960).*—Established by friends and classmates. Awarded annually to a sophomore in the School of Medicine on the basis of need and academic performance.

*James J. Whisman Scholarship (1966).*—A partial scholarship by bequest of James J. Whisman for needy and deserving students in the School of Medicine.

#### COLUMBIAN WOMEN SCHOLARSHIP FUNDS

The Columbian Women Scholarships are awarded to women students on the basis of financial need and scholastic attainment. Candidates must have completed a minimum of 15 hours at this University with a minimum of *B* (3.0) average. A letter of application for these scholarships should be addressed to the Chairman, Columbian Women Scholarships, care of the Alumni Office, The George Washington University, Washington, D.C. 20006, no later than May 15 for the fall semester, and January 1 for the spring semester. Scholarship aid is awarded from income of the following endowments:

*Jessie Fant Evans Scholarship Fund (1967).*—A \$10,000 fund for tuition aid.

*Lewes D. and Myrtle H. Wilson Memorial Scholarship Fund (1926).*—A fund of \$1,000 for tuition aid, established by Elizabeth Wilson as a memorial to her parents.

#### LOAN FUNDS

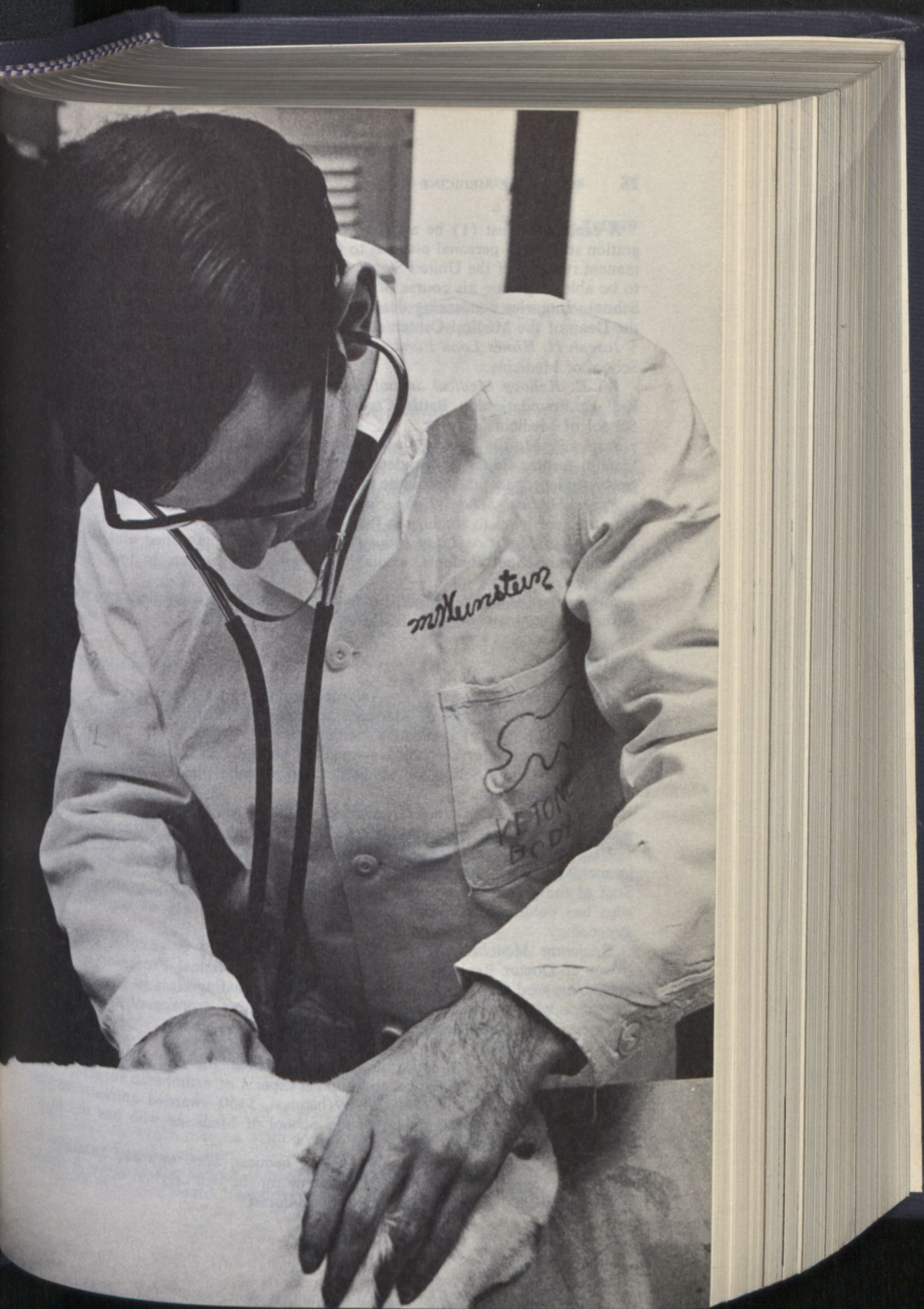
The following loan funds are available to students in the School of Medicine in accordance with the qualifications placed thereon by the donors. Unless otherwise indicated, inquiries should be directed to the Office of the Dean of the Medical Center.

*American Medical Association Medical Education Loan Guarantee Program (1960).*—Available to medical school students (beyond the first semester of medicine).

*Edith K. Carr Medical School Loan Fund (1962).*—Established by Mrs. Carr for loans to students in the School of Medicine.

*Health Professions Student Loan Program.*—This fund is available to a full-time student pursuing a course of study leading to the degree of Doctor of Medicine. Interns, residents, students engaged in premedical or other professional training, students enrolled in programs of study other than those leading to the degree mentioned above, are *not* eligible for these loans.







A candidate must (1) be a citizen of the United States or have such immigration status and personal plans as to indicate that he intends to become a permanent resident of the United States, (2) be in need of the amount of the loan to be able to pursue his course of study, and (3) be in good standing with the School. Inquiries concerning deadlines and applications should be directed to the Dean of the Medical Center.

*Joseph H. Himes Loan Fund (1956).*—Available for loans to students in the School of Medicine.

*W. K. Kellogg Medical School Loan Fund (1942).*—Established by W. K. Kellogg Foundation in Battle Creek, Michigan, for loans to students in the School of Medicine.

*Jessie B. Martin Loan Fund (1967).*—Established by friends of Jessie B. Martin, former Editor of Academic Publications at the University. An emergency student loan fund available to needy students.

*Pfizer Medical School Loan Fund (1953).*—Established by Chas. Pfizer & Co., Inc., for loans to students in the School of Medicine.

*School of Medicine Loan Fund (1951).*—A fund established and supported by medical school students, available for loans to students in the School of Medicine.

*Sutherland Medical School Loan Fund (1941).*—Established by Rose L. Sutherland for loans to students in the School of Medicine.

## PRIZES

*Allie S. Freed Prize (1957).*—Awarded annually to a member of the graduating class in the School of Medicine who has demonstrated exceptional proficiency in the field of preventive medicine.

*Walter Freeman Prize (1966).*—Awarded annually to a student in the graduating class in the School of Medicine who submits the best essay based on original investigation.

*Alec Horwitz Prize (1959).*—A prize of \$100 awarded annually to a senior who has demonstrated exceptional proficiency in the field of surgery.

*Huron W. Lawson Prize (1957).*—A prize of \$100 established by Mrs. Lawson in memory of her husband, who was a distinguished member of the Medical Staff of the University, presented annually to a member of the graduating class who has demonstrated exceptional proficiency in the field of obstetrics and gynecology.

*Benjamin Manchester Prize (1966).*—Established by a grateful patient in honor of Doctor Benjamin Manchester, Associate Clinical Professor of Medicine. Awarded annually to a member of the graduating class in the School of Medicine who has an outstanding record and shows promise of real humanitarianism in the practice of medicine.

*Julius S. Naviaser Prize in Orthopedic Surgery (1956).*—A prize of \$100 awarded annually to the senior in the School of Medicine who scores the highest grade in a written examination and clinical aspects of orthopedic surgery.

*John Ordranax Prize (1907).*—By bequest, \$150 awarded annually to the member of the graduating class of the School of Medicine who has the highest scholastic standing.

*William G. Schafhirt Prize (1966).*—By bequest, \$200 awarded annually to the senior student in the School of Medicine for the best original essay or thesis on some medical subject of current public interest.



## REGULATIONS

## ATTENDANCE

A student is not permitted to attend classes until registration has been completed and fees due have been paid. Regular attendance is required.

## GRADES

*A*—excellent; *B*—good; *C*—satisfactory; *D*—passing; *F*—failure; *I*—incomplete; *CR*—credit.

The grade *I* (incomplete) is a temporary grade. It indicates that the required work of the course has not been completed for reasons acceptable to the Dean. An "incomplete" must be removed by arrangement with the department concerned before the student may advance to the work of the following year. The appropriate permanent grade is thereupon assigned.

The grade *CR* (credit) is assigned in those courses in which attendance is required but qualitative evaluation is not made.

A student receiving a grade of *F* in any subject may not advance to the work of the following year until he has complied with such recommendations of the Committee on Scholarship as are approved by the Executive Faculty.

## QUALITY-POINT INDEX

For purposes of quantitative evaluation of academic performance a "quality-point" index is computed on the basis of *A*, four points; *B*, three points; *C*, two points; *D*, one point; and *F*, zero points.

## PROBATION

Any student in the School of Medicine not maintaining a 2.00 quality-point index at the beginning of each school year will be placed on academic probation. No student will be allowed to continue in the School of Medicine if he exceeds three semesters of probation.

## ACADEMIC DISMISSAL

A student whose cumulative quality-point index falls below 1.50 or whose academic achievement is otherwise considered unsatisfactory will be recommended to the Committee on Scholarship for dismissal from the School of Medicine.

## EXAMINATIONS

Examinations, which may be written, oral, or practical, will be held during and at the end of each semester.

All students in the School of Medicine are required to take Part I and Part II of the National Board Examinations. A student failing to attain a passing



average for the Part I examinations must repeat in September of the same year the examinations in those subjects in which he failed to make a passing grade. Such a student shall be registered for the fifth semester in the School of Medicine on academic probation.

#### GRADUATION

*Application for Graduation.*—Application for graduation must be filed in the Office of the Dean and the fee must be paid at the time of registration for the last semester of the senior year.

*Presence at Graduation.*—A candidate is required to be present at the graduation exercises unless written application for graduation *in absentia* is approved by the Dean.

#### RIGHT TO DISMISS STUDENTS

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable.

#### RIGHT TO CHANGE RULES

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

#### HEALTH SERVICES

The health services staff assists students with their medical needs by advice and treatment, by proper referral when necessary, and by cooperation with other physicians. For medical emergencies and health consultations there is, on the campus, a Student Health Clinic open from 9 a.m. to 10 p.m., Monday through Friday during the academic year and Summer Sessions, with physician and nurse in attendance. There is also a rest room for women, with a graduate nurse in charge. For night and week-end emergencies, students may go to the emergency room of the University Hospital for treatment. The basic fee for this visit will be paid by the Health Services, and all other charges will be the responsibility of the student. This arrangement is for emergency care only.

Medical privileges include: (1) three visits in any one illness by a member of the Health Services Staff, office or residence (District of Columbia); (2) hospitalization, including board and nursing, in the University Hospital for not more than one week during any twelve-month period—the necessity to be determined by the Director of Health Services.\* All additional hospital charges for operating room, anesthetics, laboratory, X-ray, medications, or any special services must be paid by the student. Expenses incurred for examinations and treatment by specialists, such as eye refraction and provision of glasses; orthopedic examinations and application of cast or other appliance; laboratory and X-ray work; and surgical operations must be paid by the student.

\* See rule 5 for exception.



These medical benefits apply only to illness or disability incurred while currently enrolled in the University. They do not apply to illness or disability incurred between the last day of examinations for a semester or summer session and completion of registration for the next semester or summer session.

The student is allowed, if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

Rules: (1) The Director of Health Services is empowered to limit or deny the medical benefits where, in his discretion, a student has, by his misconduct or breach of the rules of the University, made himself ineligible; (2) the Director of Health Services has authority to determine the necessity and length of hospitalization; (3) a student not currently enrolled or one who has severed his connection with the University is ineligible for medical benefits; (4) a student intending to train for an athletic team is required to pass a thorough examination at the beginning of each semester; (5) hospitalization is not available to those students availing themselves of other hospitalization coverage for the same illness.

The University is not responsible for injuries received in intercollegiate or intramural games, or in any of the activities of the departments of Physical Education, Health, and Recreation.

#### HEALTH AND ACCIDENT INSURANCE

In addition to the above services, the Health Service staff has arranged for Health and Accident Insurance, on an elective basis, for all full-time students. This policy covers the participant for 12 months whether at home, at the University, or elsewhere.

Current yearly cost is \$31.20 (subject to change) payable at the fall registration. Arrangements can be made to pay in two installments of \$15.60 at the fall and spring registrations.

This policy contract is between the individual student and the insurance carrier and is accepted at any hospital or emergency room that accepts this type of medical work. Details of the policy are available at the Health Services Office.

#### PHYSICAL EXAMINATIONS

All first-year students are required to have a comprehensive physical examination prior to admission to the School of Medicine. The students are informed of significant findings and advised regarding such measures as will tend to help them maintain a high standard of health.

In addition medical students benefit from the complete Tuberculosis Case Finding Program which the School maintains. Under this program all students receive tuberculin tests, X-ray examinations, and such special attention from chest specialists as is necessary to reduce to a minimum the dangers from tuberculosis. Students are immunized against those diseases for which proven prophylaxis exists.

#### RESIDENCE HALLS

Complete information concerning the University's residence halls is available at the Office of the Dean of Men or the Office of the Dean of Women, The George Washington University, Washington, D.C. 20006.



Information concerning off-campus housing may be obtained at the Office of the Dean of the Medical Center. Reservations for private housing must be made by students.

### HONOR SOCIETIES

*Alpha Omega Alpha.*—National Honor Medical Society. Members of the Junior and Senior classes meeting the qualifications specified by the constitution of the Society are eligible for election to membership.

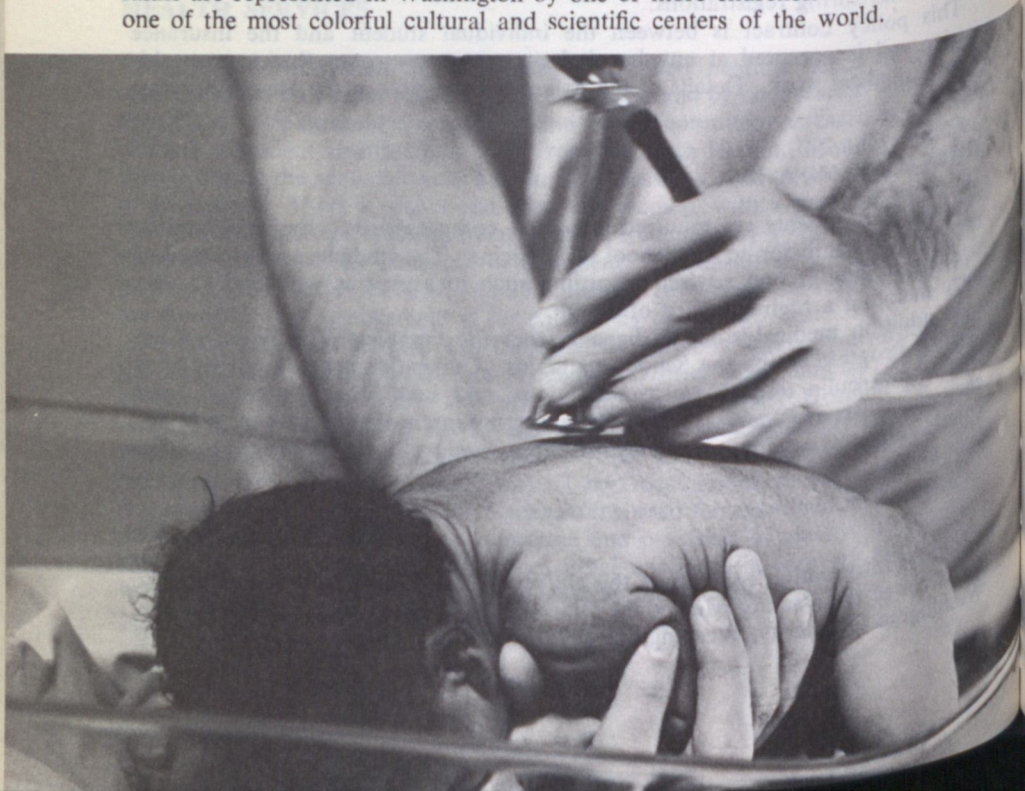
*William Beaumont Medical Society.*—Medical students showing unusual ability for medical writing and research are elected by the active members of this society.

*Howard Kane-A. F. A. King Obstetrical Society.*—The fifteen students in the third- and fourth-year classes who maintain the highest grades in their work in obstetrics are eligible for membership.

*Smith-Reed-Russell Society.*—Students of the third and fourth years who maintain a quality-point index of 3.30 or higher are eligible for membership.

### RECREATION

The Nation's capital provides abundant recreational resources, a large number of which are available at little or no cost. There are numerous art galleries, museums, concert halls, theaters, swimming pools, parks, and places of great historic interest. Social activities are provided by student organizations of the University, the School of Medicine, and University sponsored programs such as intramural sports, concerts, recitals, and dramatic productions. Religious faiths are represented in Washington by one or more churches. Washington is one of the most colorful cultural and scientific centers of the world.





## The University Hospital

THE MEDICAL STAFF CONSISTS of the following groups: Emeritus, Honorary, University, and Courtesy.

Physicians on the faculty and staff of instruction of the School of Medicine are eligible for appointments to the University Hospital staff. The Administrator of the Hospital and Clinics and the Director of Nursing are ex officio members.

### OFFICE OF THE MEDICAL DIRECTOR

C.B. Ethridge, M.D., *Medical Director*  
A.E. Parrish, M.D., *Director of Clinical Research*  
Bertle Nelson, A.B., M.D., *Secretary of the Medical Staff*

### DEPARTMENTS AND SECTIONS

Department of Anesthesiology: C.S. Coakley, M.D., *Chief*  
Department of Medicine: T.M. Brown, A.B., M.D., *Chief*; M.J. Romansky, A.B., M.D., *Associate Chief*  
Heart Station: J.M. Evans, A.B., M.D., *Director*  
Section of Allergy: Halla Brown, M.D., *Chairman*  
Section of Cardiology: J.M. Evans, A.B., M.D., *Chairman*  
Section of Dermatology: R.S. Higdon, B.S., M.D., *Chairman*  
Section of Gastroenterology: T.S. Sappington, A.B., M.D., *Chairman*  
Section of Hematology: J.J. Rheingold, A.B., M.D., *Chairman*  
Section of Infectious Diseases: M.J. Romansky, A.B., M.D., *Chairman*  
Section of Internal Medicine: Mary Watt, M.D., *Chairman*  
Section of Metabolic Diseases: L.K. Alpert, B.S., M.D., *Chairman*  
Section of Pulmonary Diseases: J.J. Feffer, A.B., M.D., *Chairman*  
Department of Neurology and Neurological Surgery: J.W. Watts, B.S., M.D., *Chief*  
Electroencephalographic Laboratory: Harold Stevens, Ph.D., M.D., *Director*  
Department of Obstetrics and Gynecology: James G. Sites, M.D., *Chief*  
Department of Ophthalmology: J.W. McTigue, A.B., M.D., *Chief*  
Department of Pathology and Clinical Pathology: T.M. Peery, A.B., M.D., D.M.S., *Chief*  
Department of Pediatrics: F.P. Heald, A.B., M.D., *Chief*  
Department of Physical Medicine and Rehabilitation: C.S. Wise, B.S., M.D., *Chief*  
Department of Psychiatry: Leon Yochelson, A.B., M.D., *Chief*  
Department of Radiology: W.W. Stanbro, M.D., *Chief*  
Department of Surgery: Brian Blades, A.B., M.D., *Chief*; P.C. Adkins, A.B., M.D., *Associate Chief*  
Section of General Surgery: Brian Blades, A.B., M.D., *Chairman*  
Section of Oral Surgery: S.G. Mead, D.D.S., *Chairman*  
Section of Orthopedics: J.P. Adams, B.S., M.D., *Chairman*  
Section of Otorhinolaryngology: J.J. McFarland, Jr., B.S., M.D., *Chairman*  
Section of Plastic Surgery: G.S. Letterman, B.S., M.D., *Chairman*  
Section of Traumatology: D.S. Wenger, M.S., M.D., *Chairman*  
Section of Urology: L.R. Culbertson, B.S., M.D., *Chairman*



University Clinics: R.S. Higdon, B.S., M.D., *Director*  
 Cancer Clinic: C.T. Klopp, A.B., M.D., *Director*  
 Nursing: Irene Menassa, R.N., B.S., A.M., *Director*

#### ADMINISTRATIVE STAFF

##### OFFICE OF THE ADMINISTRATOR

V.F. Ludewig, B.S., *Administrator*  
 F. A. Menk, *Associate Administrator*  
 A.B. Clark, B.S., M.B.A., *Assistant Administrator*  
 Raleigh Cline, B.S., M.B.A., *Assistant Administrator*  
 K.M. Brent, B.S., M.H.A., *Administrative Assistant*  
 R. F. Whitehair, *Administrative Assistant*  
 Irene Menassa, R.N., B.S., A.M., *Director of Nursing*  
 Louise O'Neal, R.N., A.B., *Assistant Director of Nursing*  
 Rainer Volk, *Assistant Comptroller*  
 F.D. Cooper, M.S., *Chief Pharmacist*  
 Madeline Brown, R.R.L., A.B., *Medical Record Librarian*

#### GENERAL INFORMATION

The George Washington University Hospital functions as an active teaching facility for students of the School of Medicine and for a large House Staff. It is fully approved by the American Medical Association, the American Hospital Association, the American College of Physicians, and the American College of Surgeons, through the Joint Commission for the Accreditation of Hospitals. The University Hospital is located on Pennsylvania Avenue at Washington Circle, six blocks from the White House, near the downtown area of metropolitan Washington. Annual admissions of inpatients number approximately 20,000; visits of ambulatory patients to the University Clinic and Cancer Clinic are approximately 40,000 a year.

The Eugene Meyer Pavilion is a new and attractive six-floor addition to the University Hospital that is now fully functional. In addition to one hundred new beds, the Eugene Meyer Pavilion contains a new and expanded operating suite specially serviced by modern electronic monitoring devices; an In- and Out-surgical Service which has its own reception accommodations, special operating rooms, and recovery area; an entire floor set aside for clinical research activities including a series of superbly equipped special laboratories and eighteen specially designated patient beds; a six-million volt linear accelerator that is especially useful to facilitate radiation therapy; a well equipped and very active radioisotope laboratory devoted to a wide variety of diagnostic and therapeutic procedures; specially designed teaching and conference areas which have telephonic-dictating, tape-recording, and visual-projection devices available.

Remodeling, updating, and extensive modification of the original Hospital building is now in process. When this phase of the building program has been completed, the enlarged and renovated University Hospital will be centrally air-conditioned throughout; will have a total of 550 beds for inpatient use; and will include a new delivery suite; specially designed and equipped intensive care



and coronary care units; enlarged X-ray, pathology, and physical medicine departments; as well as all of the latest diagnostic and supporting facilities. The University Hospital has been designed to make available to patients the highest quality of diagnostic and therapeutic services, as well as to provide a broad spectrum of interrelated teaching and research activities.

The Council on Medical Education of the American Medical Association has approved the University Hospital for straight internship in medicine, pathology, and surgery, and, together with the various specialty boards, for residency training in anesthesiology, cardiac diseases, internal medicine, neurological surgery, obstetrics-gynecology, ophthalmology, orthopedic surgery, pathology, physical medicine and rehabilitation, plastic surgery, psychiatry, radiology, surgery, thoracic surgery, and urology.

Junior and senior students of the School of Medicine are assigned to the University Hospital and Clinic to serve as clinical clerks in the various specialty departments, in the Emergency Room, and in different elective programs. Regular conferences for students, house staff, and attending physicians are held.

The George Washington University Cancer Clinic, housed in the nearby Helen L. and Mary E. Warwick Memorial Building, is part of the University Hospital clinical facilities. Cancer detection and chemotherapeutic and follow-up care, including a supervised home-care program, are among the activities of the Clinic. Approximately 2,500 new patients are seen in the Cancer Clinic each year. Excellent research laboratories form an important part of this facility. The Clinic has been approved by the American College of Surgeons.

Other major teaching activities include a residency program in hospital administration; close affiliation with the University's graduate program in hospital administration; programs in medical technology leading to the degree of Bachelor of Science in Medical Technology as well as to a certificate; and an affiliation for the training of practical nurses.

The Hospital has an excellent branch medical library. The House Staff can also arrange to use libraries of the School of Medicine and the University and the outstanding city and federal libraries and record collections.

#### INTERNSHIP, RESIDENCY, AND FELLOWSHIP PROGRAMS

*Internships.*—Straight internships are available in medicine, pathology, and surgery.

*Residencies.*—Approved residencies are offered for a total of 138 positions, in the fields of anesthesiology, cardiac diseases, internal medicine and most of its subspecialties, neurologic surgery, obstetrics-gynecology, ophthalmology, orthopedic surgery, pathology, physical medicine and rehabilitation, plastic surgery, psychiatry, roentgenology, surgery, thoracic surgery, and urology. Residency programs are from one to four years in duration, depending upon the service. Residents and fellows in the University Hospital programs also receive appointments as members of the faculty of the School of Medicine with active teaching responsibilities.

*Fellowships.*—Fellowships, through the School of Medicine, of one or two years are available in allergy, anesthesiology, cardiology, chest diseases, gastroenterology, hematology, infectious diseases, metabolic diseases, oncology, pediatrics, physical medicine and rehabilitation, renal diseases, rheumatic diseases, surgery, thoracic surgery, and University Clinics.



All appointments are for one year with the privilege of applying for continuation on the House Staff. In several of the intern, residency, and fellowship programs, excellent affiliations are maintained with local and governmental hospitals. Inquiries and applications for internships and residencies should be addressed to the Chief of the Department or to the Medical Director; the George Washington University Hospital, 901 23d Street, N.W., Washington, D.C. 20037.

Information relative to fellowships may be obtained from the Chief of the Department concerned or from the Associate Dean of the Medical Center, for Postgraduate Education, in care of the Hospital.





### MEDICAL TECHNOLOGY COURSE

This course is open to candidates for the degree of Bachelor of Science in Medical Technology, offered by Columbian College of Arts and Sciences, and to the other applicants meeting the requirements of the Registry of Medical Technologists of the American Society of Clinical Pathologists. These requirements, fully satisfied by the Columbian College program, consist of 3 years (90 semester or 135 quarter hours) of college work in any college or university approved by the recognized regional accrediting agency, including certain specific courses in the science field. The specific science requirements are as follows: *Chemistry*—a minimum of 4 semesters or 6 quarters (16 semester hours or 24 quarter hours) of studies acceptable toward a major in chemistry and including lecture and laboratory; *Biological Sciences*—a minimum of 4 semesters or 6 quarters (16 semester hours or 24 quarter hours) of studies acceptable toward a major in biological science and including lecture and laboratory; *Mathematics*—a minimum of 3 semester hours or 4 quarter hours of college mathematics.

For students enrolled in Columbian College of Arts and Sciences as candidates for the degree of Bachelor of Science in Medical Technology, the Medical Technology Course constitutes the final (fourth) year of qualification for the degree.

In the case of those who have taken their prerequisite work in some other college or university, satisfactory completion of the Medical Technology Course will not satisfy the requirements for the degree from Columbian College.

The Medical Technology Course consists of 12 months of didactic and practical work in clinical laboratory procedures, offered by the Department of Pathology in the University Hospital. Students ordinarily begin this course with the fall semester, but under exceptional circumstances may begin at other times.

A limited number of scholarships are provided by the University Hospital for students enrolled in the fourth year of the degree program. All students in this fourth year must provide themselves with uniforms; laundry of uniforms is provided by the University Hospital. A cash allowance of \$65 a month is granted during the last 6 months of the fourth year in training.

Upon satisfactory completion of the course a certificate is awarded, and the candidate is eligible for the national certifying examination given by the Registry of Medical Technologists.

Enrollment in the Medical Technology Course is strictly limited so that personal instruction can be given. Acceptance to the Columbian College degree program does not necessarily assure acceptance into the Hospital program. Inquiry about this course should be sent directly to the Department of Pathology, The George Washington University Hospital, Washington, D.C. 20037.

## Alumni and Allied Associations

### THE GENERAL ALUMNI ASSOCIATION

THE OBJECTIVES OF THIS ASSOCIATION are to unite graduates who wish to associate themselves for charitable, educational, literary, and scientific purposes, and to promote the general welfare of the University.



Eligible members are those who have matriculated in any school of the University and left the University in good standing, or any person who is or has been a member of the teaching, research, or administrative staff of the University, or of the Board of Trustees of the University. Active members are those eligible members who are current contributors to (dues or otherwise) or life members of The George Washington University General Alumni Association, the Alumni Association of any school of the University, or contributors to the Annual Support Program.

The Alumni Office is in Bacon Hall, 2000 H Street, N.W., Washington, D.C. 20006. All alumni are urged to keep the Alumni Office informed of changes of address or occupation and to supply information with regard to their fellow alumni.

#### THE GEORGE WASHINGTON UNIVERSITY MEDICAL ALUMNI ASSOCIATION

The George Washington University Medical Alumni Association, incorporated in 1959, continues the organization previously known as The George Washington University Medical Society.

The stated purposes of the Association are as follows: "This shall be a non-profit organization international in scope, whose objectives shall be to provide constructive services for the alumni of The George Washington University School of Medicine, for furthering the art and science of medicine, research, and for the promotion of the welfare of The George Washington University School of Medicine, its students, The George Washington University Hospital and its trainees."

Active membership in the Association consists of: all graduates of the School of Medicine; current members and, on application, past members of the teaching staff of the School of Medicine who hold Doctor's degrees; Doctors of Medicine who have had one or more years of postgraduate training in The George Washington University Hospital. Junior membership consists of all members of the student body of the School of Medicine during the time they are students.

The Medical Alumni Association maintains an office in the School of Medicine at 1331 H Street, N.W., Washington, D.C.

#### OFFICERS OF THE ASSOCIATION FOR THE YEAR 1967-68

*President*—Jerome H. Epstein, A.M. 1948, M.D. 1953

*President Elect*—William Brainin, A.B. 1931, M.D. 1934

*First Vice President*—James A. Dusbabek, M.D. 1934

*Second Vice President*—Jack B. Kleh, A.B. 1942, M.D. 1944

*Secretary*—Charles E. Smith, A.B. 1939, M.D. 1941

*Treasurer*—Jerome W. Canter, M.D. 1955

#### *Executive Council:*

Frederick Y. Donn, Jr., M.D. 1941

Ernest A. Gould, M.D. 1939

Richard E. Palmer, A.B., M.D. 1944

George Speck, M.D. 1941

Thomas A. Wilson, A.B. 1942, M.D. 1944

Allan Zellis, M.D. 1941



## COURSES OF INSTRUCTION

ON THE FOLLOWING PAGES OF THIS CATALOGUE are listed the courses of instruction offered by the School of Medicine. The School of Medicine serves other divisions of the University by making available to nonmedical students certain undergraduate and graduate courses in the following departments: Anatomy, Biochemistry, Epidemiology and Environmental Health, Microbiology, Pathology, Pharmacology, and Physiology. The courses listed are subject to some slight change. The University reserves the right to withdraw any course announced.

### EXPLANATION OF COURSE NUMBERS AND SYMBOLS

A number in parentheses after the name of the course indicates number of semester hours of credit which may be earned.

Courses numbered from 101 to 200 are for third- and fourth-year Columbian College of Arts and Sciences students.

Courses in the basic science departments are numbered from 201 to 400. They are for medical students and graduate students in the Arts and Sciences.

Courses in the clinical departments are numbered from 301 to 400. They are limited to medical students.

### Anatomy\*

Professors I.R. Telford (*Chairman*), Paul Calabrisi, C.M. Goss (*Visiting*), Patrick Fitzgerald (*Visiting*)  
 Professorial Lecturer J.L. Angel  
 Associate Professors F.D. Allan, T.N. Johnson, J.B. Christensen, L.E. Church (*Research*)  
 Associate Professorial Lecturers J.A. Di Paolo, Max Levitan, M.S. Legator  
 Assistant Professors H.E. Kaiser, Joan Blanchette  
 Assistant Clinical Professor R.N. Brown  
 Assistant Professorial Lecturers R.G. Clark, D.K. MacCallum

\* Staff of Instruction for the academic year 1967-68.



**\*201 Anatomy (12)**

Staff

All anatomical disciplines are integrated: regional gross dissection, histology, neuroanatomy, embryology. (Fall)

**202 Gross Anatomy (6)**

Calabrisi and Staff

For graduate students. Regional dissections of adult cadaver supplemented with lectures and X-rays. Laboratory fee for nonmedical students, \$30. (Fall)

**203 Human Embryology (1)**

Allan

For graduate students. Origin and development of human body; emphasis on value of embryology in interpreting anatomical anomalies. (Fall)

**204 Neuroanatomy (2)**

Johnson and Staff

For graduate students. Gross and microscopic anatomy of central nervous system and special senses. Laboratory fee for nonmedical students, \$13. (Fall)

**205 Microscopic Anatomy (3)**

Telford and Staff

For graduate students. Microscopic structure of cells, tissues, and organs of the human body. Laboratory fee for nonmedical students, \$13. (Fall)

**221-22 Seminar (1-1)**

Telford and Staff

For graduate students. Research reports and discussions of special topics by staff and graduate students. Medical students encouraged to attend. (Academic year)

**249 Introduction to Anatomical Research (1)**

Telford and Staff

For graduate students. Major research techniques as applied to biological materials in the various anatomical disciplines. (Fall)

**252 Physical Anthropology (1)**

Angel

Variations in man and factors affecting him, human evolution and racial differences, anatomy and culture of ancient man. (Spring)

**254 Fetal Anatomy (2)**

Allan

Dissection of early and late human fetus. Comparison of fetal and adult structures. 20 students. Laboratory fee for nonmedical students, \$10. (Spring)

**255 Basic Genetics (1)**

Di Paolo

Introductory. Basic concepts in genetics: Mendelian inheritance, linkage, gene interaction, chromosome mapping, mutation, dominant and recessive genes. (Spring)

**256 Human Genetics (1)**

C. B. Jacobson

General principles of genetics, new cytogenetics technics, aneuploidy in man and its significance, biochemical aspects of heredity, genetic counseling. (Spring)

\* Required for medical students.



- 262 Gross Anatomy of Upper and Lower Extremities (2)** Calabrisi  
Detailed dissection, supplemented by X-ray anatomy; discussions, assigned reading. 12 students. Laboratory fee for nonmedical students, \$10. (Spring)
- 264 Gross Anatomy of Head and Neck (2)** Christensen  
Detailed dissection, supplemented by X-ray anatomy; discussions, assigned reading. 12 students. Laboratory fee for nonmedical students, \$10. (Spring)
- 266 Gross Anatomy of Thorax and Abdomen (2)** Christensen  
Detailed dissection, supplemented by X-ray anatomy; discussions, assigned reading. 12 students. Laboratory fee for nonmedical students, \$10. (Spring)
- 268 Gross Anatomy of Pelvis, Perineum, and Lower Extremity (2)** Calabrisi  
Detailed dissection, supplemented by X-ray anatomy; discussions, assigned reading. 12 students. Laboratory fee for nonmedical students, \$10. (Spring)
- 270 Dissection of the Human Brain (1)** Johnson  
Dissection of major pathways and nuclei of the brain with consideration of ventricular system; conferences and assigned reading. 15 students. Laboratory fee for nonmedical students, \$10. (Spring)
- 272 Autonomic Nervous System (1)** Allan  
Development, microscopic and gross anatomy, function of central and peripheral components of autonomic nervous system. (Spring)
- 274 Tissues of the Body (1)** Telford, Blanchette  
Basic concepts in anatomy, with emphasis on primary tissues of the body—their histogenesis, growth, functions, regenerative capacities, aging, death. (Spring)
- 278 History of Anatomy and Surgery (1)** Goss  
Lectures and discussions related particularly to the lives and times of outstanding contributors to the advancement of the science of anatomy and surgery. (Spring)
- 280 Regional Anatomy (5)** Calabrisi, Christensen  
Advanced dissection of any region of the body. 4 juniors or seniors; 4-week elective periods. School of Medicine (Spring)
- 281 Neonatal Anatomy (5)** Allan  
Detailed dissection of newborn or late fetus. 4 juniors or seniors; 4-week elective periods. School of Medicine (Spring)
- 282 Advanced Neuroanatomy (5)** Johnson  
Detailed dissection of human adult brain. 5 juniors or seniors; 4-week elective periods. School of Medicine (Spring)



- 283 Introduction to Neuroanatomical Research (5)** Johnson  
Techniques and principles of research in neuroanatomy. 5 juniors or seniors; 4-week elective periods. School of Medicine (Spring)
- 284 Experimental Teratology (10)** Telford  
Congenital abnormalities in animals induced by various experimental methods. 2 juniors or seniors; 8-week elective periods. School of Medicine (Spring)
- 286 Microangiography and Microradiography (5)** Christensen  
Intimate vasculature of selected organs by injection and radiography. 2 juniors; 4-week elective periods. School of Medicine (Spring)
- 287 Human Cytogenetics (5)** C. B. Jacobson  
Chromosomal research on reproductive anomalies, congenital malformations, mutagenic assay. Tissue culture, photomicrography, karyotypic analysis, genetic counseling. 2 juniors or seniors; 4-week elective periods. Univ. Hosp. (Spring)
- 295 Research (arr.)** Staff  
Content differs each time course is offered; may be repeated once for credit. Fee to be arranged. (Fall and spring)
- 299-300 Thesis Research (3-3)** Staff  
(Academic year—as arranged)
- 398 Advanced Reading and Research (arr.)** Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1968)
- 399 Dissertation Research (arr.)** Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1968)

### Anesthesiology\*

*Professors* C.S. Coakley (*Chairman*), Seymour Alpert

*Clinical Professor* D.H. Stubbs

*Associate Professors* Paula Kaiser, Patricia Russell, B.S. Epstein, Marie-Louise Levy

*Assistant Professors* Arthur Peschin, Alice Altstatt, G.A. Morales

*Assistant Clinical Professors* S.N. Albert, Maria Benzinger, W.E. Bageant, E.J. Dealy, C.E. Fierst

*Instructor* Hildegard Manitsas

#### †301 Anesthesiology (1)

Fundamentals of anesthesia reviewed and correlated with other medical specialties. (Fall)

\* Staff of Instruction for the academic year 1967-68.

† Required for medical students.



380 **Anesthesiology** (5) Coakley  
Clinical preoperative evaluation, surgical and obstetrical anesthesia, infant and adult resuscitation, inhalation therapy. 2 juniors or seniors; 4-week elective periods. Univ. Hosp. (Spring)

381 **Anesthesiology** (5) Bageant  
Clinical preoperative evaluation, surgical and obstetrical anesthesia, infant and adult resuscitation; inhalation therapy; blood volume determinations. 2 juniors or seniors; 4-week elective periods. Wash. Hosp. Center (Spring)

382 **Clinical Anesthesia** (5) Dealy  
Surgical anesthesia, resuscitation, laryngoscopy, endotracheal technique, preoperative evaluation. 2 juniors or seniors; 4-week elective periods. V.A. Hosp. (Spring)

384 **Anesthesiology Conference** (2) Staff  
Discussions and demonstrations of clinical problems in anesthesiology; emphasis on problems of anesthesia, resuscitation, inhalation therapy which may be encountered in any type of medical practice. 30 students. Univ. Hosp. (Fall)

## Biochemistry\*

Professor C.R. Treadwell (*Chairman*)

Professorial Lecturers Sidney Udenfriend (*Intermediary Metabolism*), W.W. Burr, Jr. (*Isotopes*), R.W. Albers, Roscoe Brady, Jr., Arnold Schaefer, Sidney Shifrin, Edward Steers, Jr., W.F. Anderson, Peter Tishler (*Inherited Metabolic Disease*)

Associate Professors B.W. Smith, G.V. Vahouny, J.M. Bailey

Assistant Professor A.S. Brecher

Special Lecturers Walter Mertz, Herbert Weissbach, A.C. Chung, J.C. Smith, Jr.

†201 **Medical Biochemistry** (8) Staff  
Lectures and laboratory; emphasis on basic principles and their relation to medicine. (Fall)

221-22 **General Biochemistry** (4-4) Vahouny  
For nonmedical students. Lectures and laboratory. Prerequisite: Chemistry 52, 54. Material fee, \$20 a semester. (Academic year)

224 **Biochemistry of the Enzymes** (1) Staff  
Biochemistry of enzymes and enzyme reactions. Prerequisite: Biochemistry 221. (1968-69 and alternate years—spring)

‡225 **Biochemical Procedures** (3) B. Smith and Staff  
Laboratory course. Material fee for nonmedical students, \$16 a semester. (Fall and spring)

\* Staff of Instruction for the academic year 1967-68.

† Required for medical students.

‡ Content differs each time the course is offered; may be repeated for credit.



**\*227 Biochemistry Seminar (1)**

Staff

Current literature in biochemistry, mainly for graduate students, but open to limited number of specially qualified medical students. (Fall and spring)

**232 Proteins and Amino Acids (1)**

Steers, Shifrin

Prerequisite: Biochemistry 221. (Spring)

**241 Isotopes (3)**

Burr

Theoretical characterization of isotopes and their applications in biology. Attention given to counting, health physics and radiation safety, autoradiography, chromatography. Laboratory fee for nonmedical students, \$16. (Spring)

**251 Carbohydrate Metabolism (1)**

Prerequisite: Biochemistry 201 or 222. (1969-70 and alternate years—spring)

**252 Biochemistry of the Brain (1)**

Albers, Brady

Primarily for medical students; open to limited number of graduate students. Recent biochemical developments in structure, functions, and metabolic processes unique to the brain. (Spring)

**254 Human Nutrition (1)**

Pollack

Primarily for medical students; open to limited number of graduate students. Application of nutritional principles in humans. (Spring)

**256 Biochemistry of Organ Function (1)**

Kramer

Primarily for medical students; open to limited number of graduate students. Emphasis on biochemical processes unique to particular organ systems; application of these processes to evaluation of function. (Spring)

**258 Inherited Metabolic Diseases (1)**

Tishler

Primarily for medical students; open to limited number of graduate students. Contribution of molecular biology to understanding of human mutations and hereditary diseases. Specific disease states and genetics of protein structure discussed. Prerequisite: Biochemistry 222. (Spring)

**260 Biochemistry of the Steroids (1)**

O. Dodek

Primarily for medical students; open to limited number of graduate students. Basic chemistry of the steroids, pathways of biosynthesis and metabolism, regulatory mechanisms, physiologic effects, clinical measurement of endogenous steroids, clinical manifestations of steroid imbalance, steroid changes in pregnancy, and steroid therapy. 50 students. (Spring)

**\*262 Biochemistry of the Lipids (1)**

Vahouny

Primarily for graduate students; open to maximum of 15 medical students. Research techniques for study of lipid biochemistry. 1968-69 and alternate years; metabolism of lipids, including digestion, energy production, biosynthesis, function in specialized tissues and subcellular structures. 1969-70 and alternate years: chemistry, properties, occurrence of important classes of biological lipids. (Spring)

\* Content differs each time the course is offered; may be repeated for credit.



- 266 **Biochemical Genetics** (1) Anderson  
Primarily for medical students; open to limited number of graduate students. (Spring)
- 280 **Research in Virus-Tumor Interactions and Lipid Metabolism** (10) Bailey  
Participation in research project. 2 juniors or seniors; 8-week elective periods. School of Medicine (Spring)
- 281 **Research in Biochemistry of Carbohydrates and Enzymes** (10) B. Smith  
Research in a problem under investigation in the Department or one in a related field suggested by student. 2 juniors or seniors; 8-week elective periods. School of Medicine (Spring)
- 282 **Research in Biochemistry of Lipids** (10) Vahouny  
Biochemical investigation of a clinical problem involving lipids of special interest to the student or participation in existing research program in the Department. 2 juniors or seniors; 8-week elective periods. School of Medicine (Spring)
- \*295 **Research in Biochemistry** (arr.) Staff  
For freshman and sophomore medical students and graduate students. Participation in a project under investigation in the Department or one in a related field suggested by the student and approved by the Staff. (Fall and spring—as arranged)
- 299-300 **Thesis Research** (3-3) Staff
- 398 **Advanced Reading and Research** (arr.) Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1968)
- 399 **Dissertation Research** (arr.) Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1968)

## Dermatology†

Professor R.S. Higdon (*Chairman*)  
 Professorial Lecturer Gerda Landman  
 Clinical Professor J. Q. Gant, Jr.  
 Associate Clinical Professor Hayden Kirby-Smith  
 Assistant Professor Mervyn Elgart  
 Assistant Clinical Professors W.G. Ballinger, C.S. Brown, Manuel Landman,  
 P.L. Repetto, Jr., Donald Mitchell, L.E. Harman  
 Clinical Instructors Phyllis Huene, L.J. Eanet, H.S. Golomb, C.S. Thurston,  
 H.V. Moss, T.C. Peterson

\* Content differs each time course is offered; may be repeated for credit.  
 † Staff of Instruction for the academic year 1967-68.



**\*301 Dermatology (1)**

Diseases of the skin. (Fall)

Staff

**380 Dermatology Clinic (5)**

Harman

Conferences, lectures, and attendance at Dermatology Clinic where patients with wide variety of dermatoses are seen. To acquaint student with diagnosis and treatment of common skin disorders. Dermatologic surgical procedures, technique for using liquid nitrogen, culture and identification of fungi, microscopic diagnosis of common cutaneous diseases. 2 juniors or seniors; 4-week elective periods. Walter Reed Gen. Hosp. (Spring)

**381 Dermatology Clinic (5)**

Thurston

Same as Dermatology 380. 1 junior or senior; 4-week elective periods. Andrews Air Force Base Hosp. (Spring)

## **Epidemiology and Environmental Health†**

*Professors J.W. Millar (Chairman), James Halsted (International Health)*

*Clinical Professor Murray Grant (Community Health)*

*Professorial Lecturer Daniel Finucane*

*Associate Professors C.R. Hartman, G.L. Harper*

*Associate Clinical Professors David Frost, G.O. Pierce, Lewis Robbins, W.J. Zukel*

*Assistant Professor M.E. Landay*

*Assistant Clinical Professors Lawrence Pyle, Jr., John Vinyard, Jr.*

*Assistant Professorial Lecturers S.H. Barboo, Jr., C.H. Miller*

**\*201 Introduction to Epidemiology and  
Environmental Health (2)**

Millar and Staff

For medical students. Principles and methodology of epidemiology and biostatistics. Ecological approach to health and disease. (Spring)

**\*203 Introduction to Parasitology and Mycology (1)**

Millar, Landay

For medical students. Protozoa, metazoa, fungi; host-parasite relationships, prevention and control. (Spring)

**217 Advanced Mycology (4)**

Staff

(Formerly Microbiology 217)

Lecture (2 hours), laboratory (4 hours). Advanced study of fungi. Prerequisite: Microbiology 211 or equivalent. Laboratory fee for nonmedical students, \$16. (Fall)

**230 Statistics (2)**

Staff

(Formerly Microbiology 230)

For graduate students. Application of statistical methods to health-related problems. Prerequisite: elementary college algebra. (Spring)

\* Required for medical students.

† Staff of Instruction for the academic year 1967-68.



- \*301 Epidemiology and Environmental Health (1)** Staff  
Lectures and seminars. Emphasis on means of organizing community to provide epidemiological solutions to health problems, developing an awareness of health resources and significant socioeconomic considerations in bringing total health to the community, showing importance of health as related to individual citizens. World health problems. Prerequisite for graduate students: Microbiology 211, 212; or equivalent. (Fall)
- 351 Global Epidemiology (1)** Staff  
Geographic pathology of disease and international aspects of disease prevention and control, including world demographic problems. 20 sophomores or juniors. (Fall)
- 352 Experimental Epidemiology (1)** Staff  
Seminar. Student participation in definitions, design, and methods for developing epidemiologic studies of disease. Coordinated so that protocol developed can be applied to field use. 10 sophomores or juniors. (Fall)
- 353 Military Preventive Medicine (1)** Millar  
Operational medicine, environmental and sanitation problems, epidemiologic diseases of military importance and their prevention and control. Medical aspects of aerospace and submarine medicine. Sophomores or juniors. (Fall)
- 380 Methods in Public Health (5)** Grant  
Rotation through all divisions, including mental health, maternal and child health, environmental medicine, communicable diseases; field trips. (Spring)
- 382 Clinical Practice of Public Health (10)** Grant  
Study in depth of public health practice, participating as member of a mobile unit screening for various diseases in the community. 1 junior or senior; 8-week elective periods. D.C. Dept. of Public Health. (Spring)
- 384 Research in Public Health (10)** Staff  
Supervised research; the student selects the topic from a broad range of public health problems, including mental health, maternal and child health, environmental medicine, epidemiological methods, biostatistics. 5 juniors or seniors; 8-week elective periods. (Spring)
- 385 Studies in Cardiovascular Disease (5)** Zukel  
Participation in one or more current studies at the National Heart Institute; selection by the student. 2 juniors or seniors; 4-week elective periods. (Spring)
- 386 Parasitic Diseases (5)** Hartman  
Diagnosis, treatment, epidemiology, laboratory aspects of intestinal parasitic diseases; intensive instruction in sigmoidoscopy. 1 junior or senior; 4-week elective periods. (Spring)

\* Required for medical students.



**398 Advanced Reading and Research** (arr.) Staff  
 Limited to students preparing for Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1968)

**399 Dissertation Research** (arr.) Staff  
 Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1968)

## Medical and Public Affairs\*

*Professor Murdock Head (Chairman)*

†301 **Forensic Medicine** (1) Head and Trial Practice Court Judges  
 (Formerly Pathology 203 Forensic Medicine)

Four weeks of Law 385 *Trial Practice Court*. Practice court involving trial of medical malpractice cases. Junior medical students prepare and present the complaint and defense. (Fall—4 Saturday mornings)

351 **Forensic Medicine** (2) ‡Sharpe, Head  
 (Formerly Surgery 351)

Open to junior medical students. Examples drawn from the range of problems arising when the professional interests of lawyers and physicians overlap. Problem contexts include malpractice, personal injury litigation, licensure and discipline, ethics and economics, hospitals and other institutions of practice, and compelled treatment. (Fall)

## Medicine\*

*Professors* T.M. Brown (*Chairman*), M.J. Romansky (*Associate Chairman*) L.K. Alpert, J.M. Evans, C.B. Ethridge, A.E. Parrish, F.W. Wolff, H.J. Zimmerman, Halla Brown, Irene Tamagna  
*Clinical Professors* A.G. Prandoni, Herbert Pollack, J.J. Feffer, J.J. Rheingold, T.S. Sappington, A.B. Rosenbaum, T.J. Greenwalt  
*Associate Professors* S.W. Bush, W.R. Felts, Jr., G.A. Kelser, Jr., E.A. Gombos, M.H. Jacobson, Irene Siu, R.C. Fowler, Ariel Hollinshead (*Research—Pharmacology*), Mary Watt, N.C. Kramer, Milton Corn, Rashid Massumi, H.E. Ticktin, J.P. Nasou, C.A. Caceres, J.A. Curtin, J.K. Viktora (*Biochemistry*), J.C. Penhos (*Endocrine Research*), H.W. Clark, Jr. (*Research—Biochemistry*)  
*Associate Clinical Professors* O.R. Farley, Janet Travell, Alfred Brigulio, Joseph Ney, J.W. Latimer, Jr., T.J. Abernethy, Benjamin Manchester, F.S. Bacon,

\* Staff of Instruction for the academic year 1967-68.

† Required for medical students.

‡ Mr. Sharpe is Professor of Law in the University's National Law Center.



- L.E. Putnam, Elizabeth Hill, M.H. Stolar, S.J.N. Sugar, H.D. Ecker, C.W. Jones, C.W. Thompson, E.S. Gladsden, Maurice Mensh, F.J. Murray, E.P. Parker III, M.H. Rosenberg, Milton Gusack, Jack Kleh, H.M. Silver, J.P. Mann, Edward Adelson, R.R. Belton, S.D. Loube, Arthur Ruskin, T.W. Sheehy, C.A. Rosenberg, L.J. Thomas, W.O. Bailey, Jr., Ruth Benedict, L.S. Blumenthal, Louis Ross, S.W. Kirstein, Israel Kessler, W.D. Brill, Marvin Fuchs, C.A. Schulman, Alfred Baer, Herbert Abramson, Bertle Nelson
- Assistant Professors* Juan Calatayud, William Whitmore, Jr., F.A. Peck, P.A. Gorman, K.L. Becker, Perry Hookman, J.M. Bacos, C.G. Duarte (*Research*), Stephen Oroszlan (*Research—Pharmacology*), J.D. Finkelstein (*Research—Gastroenterology*), A.S. Gooch, Karl Wipplinger, J.S. Bailey (*Research—Microbiology*), Harold Weiss
- Assistant Clinical Professors* T.A. Gonder, David Horwitz, R.B. Castell, S.T. Gibson, M.H. Rose, Adolph Friedman, J.H. Pert, R.B. Miller, F.D. Chapman, R.G. Taylor, J.W. Long, Virginia Beelar, J.F. Ambury, T.L. Hartman, Boris Rabkin, L.A. Craig, Jr., A.W. Danish, Alvin Seltzer, J.W. Walsh, C.E. Law, E.L. Rea, Conrad Gossels, H.O. Mott, J.H. Watson, N.H. Rubenstein, W.L. Stone III, B.H. Ostrow, C.D. Cooper, S.C. Pascoe, W.R. Ehrmantraut, G.A. Chapman, F.M. Gross, Eleanor Makel, Silas Babin, Jr., Alice Brigham, Jack Crowell, D.S. Davis, J.H. Epstein, F.K. Harris II, R.F. Dyer, D.M. Tormey, E.H. Bauersfeld, William Lewis, E.J. Leonard, J.W. Roark, H.I. Passes, C.W. Foulke, A.A. Lear, O.W. Donnelly, R.S. Poole, H.C. Sadin, S.J. Talpers, W.L. Hall, George Sharpe, Raymond Scalett, Thomas Shworles (*Social Psychologist*), M.A. Sislen, C.J. Savarese, Jr., G.C. Buchanan, G.T. Economos, Irwin Ardam, S.W. Dejter, S.E. Barr, H.A. Moskovitz, J.T. Hagenbucher, G.N. Polis, W.F. Morrissey, R.A. Apter, M.S. Artenstein, J.E. Stauch (*Research*), Jean Lucas, B.R. Cooperman, A.W. McLaurin, Francis Chucker, Gilbert Hurwitz, R.S. Wilkinson, W.E. Gallinek, L.H. Biben, W.H. Harvey, William Kurstin, Dorothea Chapman, L.H. Fenton, F.J. Jarsen, H.C. Alexander, Jr., C.W. Humphreys, Jr.
- Instructors* M.J. Garcia, J.C. Rios, B.F. Johnson (*Research—Clinical Pharmacology*), Ching-Hui Wu (*Research—Endocrine Research*), C.H. Chan (*Metabolic Research*), E.D. Hendler, W.R. Ayers (*Research*), H.M. Hochberg, (*Research*), J.F. Mermel, A.L. Moede, C.H. Oliver, Jr., Boris Vlalukin
- Clinical Instructors* N.K. Bohrer, N.G. Goodman, J.D. Herman, Scheldon Kress, Frederick Meyers, Lily Ruckstuhl, C.U. Shilling, H.O. Schindelar, Paul Schlein, R.M. Kaufman, Andre Barrabini, E.F. Aune, Robert Kramer, F.J. Borsody, Richard Schoenfeld, M.J. Halberstam, D.W. Datlow, G.G. Kay, R.A. Fischer, W.T. Moore, R.M. Huffman, E.B. Thompson, S.A. Lundberg, Florentino Palmon, G.B. Cushner, S.J. Conway, L.P. Appel, M.A. Herman, R.O. Knox, R.S. Waldman, R.W. Turner, C.W. Kinzer, S.A. Schwartz, T.D. Gelehrter, N.M. Kredich, A.R. Thomas, Marvin Schneider, Kenneth McIntosh, Fidel Quintana, Gladys Rosenstein, Herman Rosenstein, A.G. Brody, Harris Kenner, J.S. Sidel, N.P. Trujillo, Philip Witorsch, I.V. Magal, G.A. Tralka, Arthur Turk, L.B. Sheiner, Stephen Podolsky, L.F. Barker, R.J. Lindeman, D.D. Haut, Isaac Weiszer, P.R. Lenz, R.G. Basalyga, C.A. Ries, A.J. Anderson, V.J. Marder
- Special Lecturers* Sol Katz, R.W. Berliner, T.H. McGavack, P.D. Comanduras, W.L. Nalls, Albert Sjoerdsma, D.S. Frederickson, Pierre Tulou, T.W. Mattingly



- \*301 Physical Diagnosis (4)** Putnam and Staff  
Theoretical and practical application of principles of physical diagnosis; training with bed patients under individual instruction. Designed to develop ability in examination of patients and case history taking. Univ., D.C. Gen., and affiliated hosps. (Spring)
- \*302 Laboratory Medicine (2)** Rheingold and Staff  
Clinical application of laboratory examinations of blood, body fluids, exudates, excreta. (Spring)
- \*303 Principles of Internal Medicine (2)** Staff  
Principles and practice of internal medicine. (Spring)
- \*304 Major Clinical Situations (Medicine) (4)** Staff  
Lectures and demonstrations on medical diagnosis and treatment. (Fall)
- \*305 Inpatient Clerkship I (10)** T. Brown, Romansky, and Staff  
Training in comprehensive study of patients; history and physical examination; ward rounds, consultations, conferences, preceptorial teaching, seminars. Univ. and D.C. Gen. hosps. (8-week periods throughout academic year)
- \*306 Inpatient Clerkship II (5)** Hill, Apter, Katz, Curtin, Zimmerman and Staff  
Continuation of Medicine 305. Fairfax and V.A. hosps. and Wash. Hosp. Center. (Spring—4 weeks)
- \*308 University Clinics (10)** Watt and Staff  
Studies of ambulatory patients under close supervision. Daily clinics in general medicine and various specialties; conferences on current cases. Univ. Hosp. (8-week periods throughout academic year)
- 309 Medical Pulmonary Conferences (1)** Feffer, Silver  
Weekly conference, primarily for interns and residents. 10 students. Univ. Hosp. (Fall)
- 310 Hematology Rounds (1)** Rheingold  
Diagnostic and therapeutic evaluation of hospitalized patients with hematologic disorders. 6 students. Univ. Hosp. (Fall)
- \*312 Continuing Care Program (2)** Tamagna, Wipplinger, and Interdepartmental Staff  
Interdepartmental medical care program. Each student is responsible, under guidance and direction of preceptors, for diagnosis and care of three patients chosen from the disciplines of medicine, obstetrics, psychiatry, and pediatrics. Health maintenance, development of the family doctor-patient relationship stressed; introduction to use of community health resources. Univ. and Fairfax hosps. and Wash. Hosp. Center. (Fall)
- 313 Special Topics in Medicine (1)** Pollack, N. Kramer, H. Brown  
Application of principles of basic sciences to problems of clinical medicine. (Fall)
- 355 Clinical Electrocardiography (1)** Calatayud  
Basic principles of electrocardiography. Univ. Hosp. (Fall)

\* Required for medical students.



- 367 **Research in Clinical Electrocardiography** (10) Calatayud  
Active participation in research in clinical electrocardiography. Correlations of the ECG with clinical and/or pathological data. Prerequisite: Medicine 355. 1 junior or senior; 8-week elective periods. Univ. Hosp. (Spring)
- 368 **Biochemical Effects of Drugs in Man** (5) Viktora, Wolff  
Correlation between clinical research at the bedside and laboratory experimentation. Participation in clinical and laboratory follow-up of patients. 2 juniors or seniors; 4-week elective periods. Wash. Hosp. Center. (Spring)
- 369 **Metabolic Fate of Drugs in Animals and Man** (10) Viktora, Penhos, Wolff  
Introduction to methods used in study of drug metabolism, qualitative and quantitative chromatography, organ perfusion studies. 4 seniors; 8-week elective periods. Wash. Hosp. Center. (Spring)
- 370 **Inpatient Medicine** (5) Hill, Apter  
Diagnostic studies and clinical management of bed patients on Medical Service; teaching rounds and conferences. 4 seniors; 4-week elective periods. Fairfax Hosp. (Spring)
- 371 **Arthritis and Rheumatic Diseases** (5) T. Brown, Bush, Felts  
Introduction to clinical problems in diagnosis and treatment of arthritis and rheumatic diseases, review of clinical and research procedures employed in laboratory. 2 juniors or seniors; 4-week elective periods. Univ. Hosp. (Spring)
- 372 **Clinical Renal Disease** (5) Parrish  
Clinical and laboratory procedures for study of renal disease; ward rounds, consultations, conferences, seminars. 1 senior; 4-week elective periods. Univ. and D.C. Gen. hosps. (Spring)
- 373 **Inpatient Medicine** (5) Romansky, Ticktin  
Comprehensive study of patients on GWU Medical Service; ward rounds, consultations, seminars, conferences. 8 juniors or seniors; 4-week elective periods. D.C. Gen. Hosp. (Spring)
- 374 **Clinical Microbiology** (5) Romansky  
Clinical and laboratory problems in infectious diseases; rounds, conferences, seminars. 1 junior or senior; 4-week elective periods. D.C. Gen. Hosp. (Spring)
- 375 **Studies in Hypertension** (10) Tamagna  
Participation in care of inpatients and outpatients and in research projects. 1 junior or senior; 8-week elective periods. Univ. Hosp. (Spring)
- 376 **Total Patient Care** (10) Tamagna  
Teamwork program for total patient care, including clinical and psychologic studies and rehabilitation; group conferences; research studies. 1 junior or senior; 8-week elective periods. Univ. Hosp. (Spring)



- 377 Hepatic and Metabolic Diseases (5)** Ticktin  
Clinical studies of patients with hepatic and pancreatic diseases, endoscopy, splenoportography, liver biopsy; research studies in enzymes and ammonia metabolism in hepatic diseases. 2 juniors or seniors; 4-week elective periods. D.C. Gen. Hosp. (Spring)
- 378 Endocrinology and Cancer Chemotherapy (5)** Alpert  
Clinical and laboratory work; emphasis on endocrinology (and metabolism) or cancer chemotherapy, depending on student's choice. 2 seniors; 4-week elective periods. Univ. Cancer Clinic. (Spring)
- 379 Clinical Biophysics (10)** Fowler  
Research, employing various physical and physicochemical techniques in the study of collagen vascular diseases. 1 junior or senior; 8-week elective periods. Univ. Hosp. (Spring)
- 380 Clinical Application of Tissue Immunology (5)** N. Kramer  
Application of immunologic methods to study of human hypersensitivity states and metabolic diseases; serum proteins, including protein hormones and enzymes; research principles and methods. 2 juniors or seniors; 4-week elective periods. D.C. Gen. Hosp. (Spring)
- 381 Heart Disease: Electronics and Computers I (5)** Caceres  
Introductory training in electrocardiography using computer as instructional aid (minimum of 4 students a period). 6 juniors or seniors; 4-week elective periods. Univ. Hosp. Heart Station. (Spring)
- 382 Clinical Cardiopulmonary Physiology (10)** Massumi  
Clinical and laboratory evaluation of cardiac and pulmonary problems; training in ECG, phonocardiography, cardiac catheterization, angiocardiology, pulmonary function testing. Research encouraged. 1 junior or senior; 8-week elective periods. D.C. Gen. Hosp. (Spring)
- 383 Laboratory Studies of Human Entero- and Respiratory Viruses (10)** McIntosh  
Research program involving characterization of new entero- and respiratory viruses; rounds, conferences, seminars; laboratory techniques. 1 junior or senior; 8-week elective periods. N.I.H. (Spring)
- 384 Inpatient Medicine (5)** Curtin  
Clinical case studies, including histories and physical examinations, consultations, pathologic and radiologic follow-up; library assignments; ward rounds and conferences. 6 juniors; 4-week elective periods. Wash. Hosp. Center. (Spring)
- 385 Inpatient Medicine (5)** Zimmerman, Katz  
Team member in clinical program involving complete study of medical patients. Ward rounds, seminars, conferences. 2 seniors; 4-week elective periods. V.A. Hosp. (Spring)
- 386 Inpatient Medicine and Medical Emergencies (5)** Curtin, Bacos  
To prepare seniors for internship. Assignments to inpatient medicine (Intensive Care Unit) and emergency room; ward rounds and conferences, radiologic and pathologic follow-up; library assignments. 4 seniors; 4-week elective periods. Wash. Hosp. Center. (Spring)



- 387 **Renal Diseases—Fluid and Electrolyte Problems** (10) Jacobson  
Rounds, clinics, conferences, clinical research projects. 1 junior or senior;  
8-week elective periods. Univ. Hosp. (Spring)
- 388 **Experience in Allergy** (5) H. Brown  
Diagnosis and treatment of allergic states; skin, eye, and scratch tests; clinical and experimental studies; library assignments. 2 seniors; 4-week elective periods. Univ. Hosp. (Spring)
- 389 **Research** (3) Staff  
Research project under supervision of members of Department of Medicine. Limited to juniors. Univ. and D.C. Gen. hosps. (Fall)
- 390 **Inpatient Medicine** (10) Evans, Mermel  
Comprehensive study of Medical Service patients; ward rounds, consultations, conferences, preceptorial teaching, seminars. 6 juniors or seniors; 8-week elective periods. Univ. Hosp. (Spring)
- 391 **Clinical Cardiology** (5) Siu, Gooch  
Includes electrocardiography. 8 juniors or seniors; 4-week elective periods. Univ. Hosp. (Spring)
- 392 **General Practice Preceptorship** (5) \*J.P. Anderson  
Preceptorship in small urban community general practice. 1 junior or senior; 4-week elective periods. Waynesboro, Va. (Spring)
- 393 **Clinical Hematology** (5) Corn  
Clinical and laboratory studies of patients with hematologic disorders; bone marrow and peripheral blood smears, hemoglobin electrophoresis, evaluation of coagulation mechanism. 1 junior or senior; 4-week elective periods. D.C. Gen. Hosp. (Spring)
- 398 **Introduction to Cardiology** (5) Bacos  
Clinical cardiology, correlating bedside approach to cardiovascular diagnosis with special diagnostic studies, including phonocardiography, atrial electrocardiography, cardiac catheterization, angiocardiology. 1 junior; 4-week elective periods. Wash. Hosp. Center. (Spring)
- 399 **Heart Disease: Electronics and Computers II** (10) Caceres  
Research in one of the following areas—computer analysis of arrhythmias, correlation of ECG with autopsy data, ECG variability, ECG during exercise, instrumentation in blood pressure recording, computer analysis of pulmonary function tests, plethysmograph, phonocardiography, statistical analysis of ECG data, automatic identification of bacteria, computer analysis of electrophoretic curves. 4 juniors or seniors; 8-week elective periods. Univ. Hosp. Heart Station. (Spring)

\* Dr. Anderson is in private practice in Waynesboro.



## Microbiology\*

Professors A.M. Griffin, Mary Louise Robbins, R.C. Parlett (*Chairman*), L.J. Griffith (*Visiting*)  
 Professorial Lecturers F.B. Gordon (*Virology*), Dorothy Heilman (*Cellular Immunology*)  
 Associate Professors Rudolph Hugh, L.F. Affronti  
 Assistant Professors Melvin Reich, G.L. Wright, Jr., Yang-Ming Chu (*Research*)  
 Assistant Professorial Lecturer P.J. Price  
 Lecturer E.L. Speck

### †201 Medical Microbiology (5)

Parlett and Staff

For medical students; open to qualified graduate students. Bacteria, rickettsiae, viruses, yeasts, molds, protozoa, metazoa which relate to the health and disease of man—cultural studies, methods of diagnoses, theories. (Spring)

### 211 Microbiology (4)

Staff

For graduate students. Bacteria, fungi, rickettsiae, viruses. Prerequisite: any biological laboratory science, Chemistry 52, 54. Laboratory fee, \$16. (Fall)

### 212 Pathogenic Microbiology (4)

Staff

For graduate students. Continuation of Microbiology 211; emphasis on harmful activities of microorganisms. Prerequisite: Microbiology 211 or equivalent. Laboratory fee, \$16. (Spring)

### 214 Tissue Cell Culture and Somatic Variation (4)

Price

Techniques of tissue culture and means of studying somatic variations. Prerequisite: Microbiology 211, 212. (Spring)

### 225 Microbial Physiology I (3)

Affronti, Reich

(Formerly Microbial Chemistry and Physiology)

Biochemical features of various microorganisms—especially bacteria—described and compared with those of the animal cell. Prerequisite: Biochemistry 221-22 or equivalent. Microbiology 211 or equivalent recommended. (1969-70 and alternate years: fall)

### 227 Microbial Physiology II (3)

Affronti, Reich

(Formerly Microbial Pharmacology)

Interactions of drugs and microorganisms—action of drugs on microbes, resistance of microbes to drugs, metabolism of drugs by microbes. Prerequisite: Microbiology 225 or permission of instructor. (1968-69 and alternate years: fall)

### 231 Immunology (1)

Parlett

(Formerly Immunology and Immunochemistry (4))

Broad considerations of the reticulo-endothelial system functions in immune responses. (Fall)

\* Staff of Instruction for the academic year 1967-68.

† Required for medical students.



- 233 **Biology of Viruses** (4) Robbins  
For graduate students. Viruses and rickettsiae. Prerequisite: Microbiology 211. Laboratory fee, \$16. (Fall)
- 235 **Systematic Bacteriology** (3) Hugh  
History of bacterial classification, international rules of nomenclature as applied to bacteria, development of bacterial classification based upon relationships, survey of characteristics of bacterial groups. Prerequisite: Microbiology 212 or equivalent. (Fall)
- 251 **Bacteriology** (2) Hugh  
Primarily elective course for medical students; open to graduate students. Clinical situations involving bacteriology. (Fall)
- 255 **Virology** (2) Robbins  
Primarily elective course for medical students; open to graduate students. Parallels Microbiology 251, with substitution of viruses for bacteria. (Fall)
- 257 **Immunochemistry** (2) Wright  
(Formerly Immunology)  
For graduate and medical students. Lecture (1 hour), laboratory (3 hours). Biochemical and physical aspects of immunologically active substances. Limited enrollment. Laboratory fee for nonmedical students, \$16. (Fall)
- 271-72 **Seminar: Immunology** (1-1) Parlett, Wright  
For graduate and medical students. Admission by permission of instructor. (Academic year)
- 273-74 **Seminar: Virology** (1-1) Robbins  
For graduate and medical students. Admission by permission of instructor. (Academic year)
- 275-76 **Seminar: Microbial Physiology** (1-1) Affronti, Reich  
For graduate and medical students. Admission by permission of instructor. (Academic year)
- 277-78 **Seminar: Bacteriology** (1-1) Hugh  
For graduate and medical students. Admission by permission of instructor. (Academic year)
- 280 **Virology** (10) Robbins  
Selected problems; library assignments, laboratory studies. 4 juniors or seniors; 8-week elective periods. (Spring)
- 281 **Bacterial Physiology** (5) Affronti  
Selected problems; library assignments, laboratory studies. 5 juniors or seniors; 4-week elective periods. (Spring)
- 282 **Immunology** (5) Parlett  
Research problems. 3 juniors or seniors, 4-week elective periods. (Spring)
- 283 **Bacteriology** (10) Hugh  
Selected problems; library assignments, laboratory studies. 2 juniors or seniors; 8-week elective periods. (Spring)



- 284 Immunologic Characterization of Cell Lines in Tissue Culture (10)** Price  
Preparation of specific antigens from a cell strain and production of antibodies against this strain in appropriate mammalian host; identification of unknown cell types using tissue culture, serology, immunochemistry. 2 juniors or seniors; 8-week elective periods. (Spring)
- 285 Diploid Cell Lines in Tissue Culture (10)** Price  
Mammalian cells growing on glass surfaces in various media, staining chromosomes and determining chromosome pattern and number, methods of cell preservation such as liquid nitrogen freezing. 2 juniors or seniors; 8-week elective periods. (Spring)
- 286 Transformation of Cells in Tissue Culture (10)** Price  
Conversion of normal cell lines in tissue culture to heteroploid cell lines, demonstration of cancerous nature of transformation by inoculation of hamster cheek pouch. Polyoma virus and SB 40 used with various cell types, including human embryo. 2 juniors or seniors; 8-week elective periods. (Spring)
- 293-94 Departmental Seminar (1-1)** Griffith  
For graduate students. Monthly throughout the year. (Academic year)
- 295 Research in Microbiology (arr.)** Staff  
Content differs each time the course is offered; may be repeated once for credit. (Fall and spring; summer 1968)
- 299-300 Thesis Research (3-3)** Staff
- 398 Advanced Reading and Research (arr.)** Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring; summer 1968)
- 399 Dissertation Research (arr.)** Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring; summer 1968)

## Neurology and Neurological Surgery\*

*Professors* J.W. Watts (*Chairman*), Harold Stevens, R.S. Paine (*Pediatric Neurology*)

*Professorial Lecturers* K.M. Earle, N.P. Goldstein

*Clinical Professors* J.M. Williams, R.H. Groh, H.V. Rizzoli, H.H. Ammerman

*Associate Clinical Professors* G.J. Hayes, J.P. Murphy

*Assistant Professors* G.M. Fenichel, Emanuele Mannarino

*Assistant Clinical Professors* A.S. Dekaban, G.M. Swain, G.D. Weickhardt, Ntinios Myrianthopoulos, N.H. Horwitz, Ruth Jakoby, Virginia Duggins,

L.G. Kempe, Cosimo Ajmone Marsan, J.L. Fox, W.E. Porter

*Instructors* Karin Nelson, Mary Bazelon, M.N. Ozer, Ann Barnett

\* Staff of Instruction for the academic year 1967-68.



*Clinical Instructors* M.C. Korengold, Z.W. Sanders, R.H. Robertson, R.A. Mendelsohn, A.P. Hustead, Kristoff Abraham, J.W. Barrett, C.P.H. Carroll, E.C. Wilner, G.J. Siegel

\*301 **Neurology and Neurological Surgery** (2) Stevens, Watts

Clinical lectures and demonstrations dealing with form and function of nervous system. Transition between basic sciences and clinical neurology and neurological surgery stressed and correlated. (Fall)

381 **Clinical Neurosurgery** (5) Kempe

Participation in all departmental activities: ward rounds, daily conferences, radiographic and pathologic studies, operating room procedures; emphasis on studies of cerebral circulation. 1 junior or senior; 4-week elective periods. Walter Reed Gen. Hosp. (Spring)

382 **Pediatric Neurology** (5) Paine

Clinical clerkship in diagnostic study and care of inpatients and outpatients; conferences and teaching sessions. 2 juniors or seniors; 4-week elective periods. Children's Hosp. (Spring)

383 **Clinical Neurology** (5) Porter

Emphasis on neurological examination and basic sciences, including neuroanatomy, as applied to clinical material. 2 juniors or seniors; 4-week elective periods. Walter Reed Gen. Hosp. (Spring)

384 **Histochemical Techniques for Neurology** (5) Fenichel

Histochemical procedures, including quick freezing techniques, cryostat sectioning, and a variety of enzyme reaction stains. 1 junior or senior; 4-week elective periods. Children's Hosp. (Spring)

385 **Clinical Neurosurgery** (5) Fox

Clinical clerkship will include experience with diagnostic procedures: arteriograms, pneumoencephalograms, myelograms, and assisting in operation room; conferences and ward rounds. 1 junior or senior; 4-week elective periods. V.A. Hosp. (Spring)

386 **Clinical Neurology** (10) Goldstein

Clinical clerkship under close supervision of highly experienced clinicians and teachers. Trainees do own histories and physicals, attend rounds and conferences, assist in routine procedures. Abundant clinical material available. 2 juniors or seniors; 8-week elective periods. Mayo Clinic. (Spring)

## Obstetrics and Gynecology†

*Professors* John Parks, R.H. Barter, Roy Hertz (*Human Development*), J.G. Sites (*Chairman*)  
*Clinical Professors* S.M. Dodek, J.A. Dusbabek  
*Associate Clinical Professors* C.K. Fraser, J.K. Cromer, Edward Zimmermann, W.T. Lady, W.P. McKelway, J.W. Pearson, Jr., Shirley Martin, M.S. Kaufman, M.P. Footer, Donald Walters, J.M. Friedman, B.W. Richwine

\* Required for medical students.

† Staff of Instruction for the academic year 1967-68.



*Assistant Professor* Benny Waxman

*Assistant Clinical Professors* Caroline Jackson, T.A. Wilson, J.R. Epstein, S.H. Shea, G.L. Jarvis, N.J. Price, J.C. Walsh, L.M. Liverett, Peter Soyster, H.P. Treichler, W.H. Cooper, I.W. Rovner, M.W. Sandmeyer, Jr., N.M. Tart, L.W. Davis, R.B. Nelson

*Instructors* C.B. Jacobson, J.L. Marlow

*Clinical Instructors* A.S. Bright, Elizabeth Crisp, A.W. Winshel, S.M. Belinsky, R.V. Erkenbeck, E.E. Gahres, John Lukasik, D.R. Carlson, E.E. Cunningham, Geraldine Paul, L.Q. Pugsley, H.L. Kotz, O.I. Dodek, Jr., T.F. Blackwelder, M.H. Hird, S.F. Stewart, Jr., Josiah Sacks, J.R. Marshall, Philip Corfman, R.E. Badwey, G.R. Hewlett, E.W. Titus, Jr., T.H. Gresinger, J.A. Austin, B.C. Schwartz, J.M. Close, E.R. Kolvereid, D.M. Margulies, J.C. Skilling, S.D. Cooley, L.E. Fettig, G.D. London, H.S. Gates, Jr.

*Lecturer* Joel Solomon (*Genetics*)

**\*301 Obstetrics and Gynecology (1)**

Parks, Sites

Lectures and demonstrations covering entire field; emphasis on clinical management. (Spring)

**\*302 Major Clinical Situations (Obstetrics and Gynecology) (3)**

Staff

Lectures and demonstrations covering diagnosis and treatment. (Fall)

**\*303 Clinical Obstetrics and Gynecology (10)**

Staff

Participation in all obstetrical and gynecological clinics, daily departmental conferences and ward rounds at University, Fairfax, and Columbia hospitals. Manikin demonstrations of mechanism of labor and various types of operative delivery. (Fall)

**380 Clinical Gynecology (5)**

Barter

Participation in clinical studies; rounds and conferences. 2 seniors; 4-week elective periods. Univ. Hosp. (Spring)

**383 Clinical Obstetrics (5)**

S. Dodek, Fraser

Includes prenatal clinics, lying-in periods, delivery and postpartum care; rounds, conferences, seminars. 2 juniors or seniors; 4-week elective periods. Wash. Hosp. Center (Spring)

**384 Clinical Gynecology (5)**

Cromer, Gahres

Case assignments, rounds and conferences, including tumor board; gynecologic pathology, preparation for surgery, attendance at surgery, post-operative care. 2 juniors or seniors; 4-week elective periods. Wash. Hosp. Center (Spring)

**386 Inpatient Obstetrics and Gynecology (5)**

Zimmermann

Supervised instruction in large military hospital; rounds and conferences. 4 juniors or seniors; 4-week elective periods. Walter Reed Gen. Hosp. (Spring)

**387 Clinical Obstetrics and Gynecology (5)**

Sites

Participation in clinical studies; rounds and conferences. 1 junior or senior; 4-week elective periods. Univ. Hosp. (Spring)

\* Required for medical students.



**388 Clinical Obstetrics and Gynecology (5)**

Soyster

All aspects of inpatient and outpatient obstetrical and gynecologic services; rounds, obstetrical-gynecologic conferences, gynecologic pathology conferences; obstetrical anesthesia; Emergency Room consultations. Home visits to selected patients with Health Department Nurse. 2 juniors or seniors; 4-week elective periods. Fairfax Hosp. (Spring)

**389 Gynecologic Cancer Research (5)**

McKelway

Clinical research; surgical techniques and library assignments. 1 senior; 4-week elective periods. Univ. Cancer Clinic (Spring)

**390 Obstetrical and Gynecological Conference (2)**

Regular conferences designed primarily for medical students. Diagnostic and therapeutic problems in clinical obstetrics and gynecology. 5 juniors. Univ. Hosp. (Fall)

**391 Cytogenetics (1)**

C. Jacobson

Clinical chromosomal anomalies in man, experimental design and data analysis in cytogenetics, two cytogenetic techniques, sex chromatin analysis, tissue culture procedures. Prerequisite for second-year students: previous course in genetics. Special students admitted with approval of instructor. (Fall)

**392 Reproductive Genetics (1)**

C. Jacobson

For medical students; open to graduate students with permission of instructor. Lectures with guest speakers, covering current methodology. Emphasis on human infertility; clinical case presentation and review utilized whenever possible. Major topics: gametogenesis, *in vivo* gamete manipulation and fertilization, nidation, and selective factors in development. 15 sophomores or juniors. Univ. Hosp. (Fall)

**393 Mutation—Medical and Biological Significance (1)**

Legator

Clinical significance of genetic change; classification of mutagenic agents, their mode of action and screening systems for suspected mutagens. Medical complications of human mutation, i.e., toxicity, carcinogenesis, teratogenesis, and reproductive lethality, will be discussed. (Fall)

**394 Genetic Counseling Clinic (1)**

C. Jacobson

Participation in physical examination, pedigree review, special testing of patients referred for genetic counseling. Common types of genetic anomalies, diagnostic tests, thorough reproductive counseling. 4 juniors. Univ. Hosp. (Fall)

**Ophthalmology\***

Professor J.W. McTigue (*Chairman*)

Clinical Professors F.D. Costenbader, J.H. King, Jr., L.E. Zimmerman (*Ophthalmic Pathology*), L.C. Moss, Benjamin Rones

Associate Professor B.S. Fine

\* Staff of Instruction for the academic year 1967-68.



*Associate Clinical Professor* R.W. Wilkinson

*Assistant Professors* H.A. Urweider, D.S. Friendly

*Assistant Clinical Professors* W.J. Romejko, W.P. Chalfant, Jr., W.J.G. Davis, R.E. duPrey, Robert Day, M.G. Alper, J.H. Lodge, W.B. Glew, J.T. Schwartz, K.A. Simon

*Instructors* Ronald Fishman, W.S. Gilbert

*Clinical Instructors* J.R. Weimer, Stephen Pappas, Joanne Economon, D.K. Berler, R.S. Deitch, H.S. Wicker, H.I. Rodman, G.T. Davies, A.L. Fjordbotten, George Liss, H.M. McAllister, L.E. Perraut, Victor Preziosi, H.J. Starr, D.L. VerLee, R.R. Widner, M.H. Zimmerman, Leonard Kogan

**281 Ophthalmic Pathology I (1)** L. Zimmerman  
Basic science aspects of diseases of the eye. (Spring)

**282 Ophthalmic Pathology II (3)** L. Zimmerman  
Diseases of the eye as revealed by gross and microscopic examination. 8 students. Armed Forces Inst. of Path. (Spring)

**284 Ophthalmic Pathology III (5)** L. Zimmerman  
Daily participation in an active service limited to pathology of the eye and its adnexa. Inflammatory, degenerative, and neoplastic diseases comprise the major categories. 1 junior or senior; 4-week elective periods. Armed Forces Inst. of Path. (Spring)

**\*301 Ophthalmology (1)** Staff  
Basic principles of medical and surgical ophthalmology and neuro-ophthalmology. (Fall)

**\*302 Ophthalmology (OPD) (1)** Lodge  
Clinical instruction in external examination of the eye; tonometry and funduscopy. Use of ophthalmological instruments. (Fall)

**380 Clinical Ophthalmology (5)** Lodge and Staff  
Observation of diseases of the eye and ophthalmic surgery in outpatients and inpatients; rounds, conferences, specialty clinics. 8 juniors or seniors; 4-week elective periods. Wash. Hosp. Center (Spring)

## Orthopedic Surgery†

*Professor* J.P. Adams (*Chairman*)

*Clinical Professor* J.S. Neviasser

*Associate Professor* Peter Kenmore

*Associate Clinical Professors* H.L. Feffer, L.T. Peterson, Charles Keck

*Assistant Clinical Professors* C.W. Metz, Jr., R.L. Dow

*Clinical Instructors* Frances Brennecke, H.E. Lane, Jr., Robert Engler, K.A. Peterson, N.F. Fee, L.A. Ottenritter, Myron Koch, Ronald Ottenberg

**\*301 Lectures on Orthopedics and Fractures (1)** Adams and Staff  
Wash. Hosp. Center. (Fall)

\* Required for medical students.

† Staff of Instruction for the academic year 1967-68.



**380 Orthopedic Surgery (5)**

Adams, Metz

A rotating program; one week of adult orthopedics at University Hospital, one week of children's orthopedics at D.C. General Hospital, one week of general orthopedics at Walter Reed General Hospital. 3 seniors; 4-week elective periods. (Spring)

**381 Orthopedic Surgery (5)**

Kenmore

Participation in total care program of orthopedic patients; daily rounds, conferences, seminars. 2 juniors or seniors; 4-week elective periods. V.A. Hosp. (Spring)

**Otolaryngology\***

*Associate Clinical Professor* J.J. McFarland, Jr. (*Chairman*)

*Assistant Clinical Professors* J.L. Levine, M.E. Krucoff, R.S. Page, Jr., J.A.

Sabri, W.M. Tribble, B.M. Webb, R.L. Fields

*Clinical Instructors* I.S. Jaffee, R.D. Ralph, H.H.E. Scheidemandel, G.F. Miller, Jr., R.E. Pumphrey, Jr.

**†301 Otolaryngology (1)**

Staff

Lectures and demonstrations on anatomy, physiology, and diseases of the ear, nose, and throat. (Spring)

**380 Otolaryngology (5)**

McFarland

Care of inpatients and outpatients, diagnosis, and therapy; rounds and conferences. 8 juniors or seniors; 4-week elective periods. Wash. Hosp. Center (Spring)

**Pathology\***

*Professors* T.M. Peery (*Chairman*), W.R. Duryee (*Research—Experimental*), F.N. Miller, Jr., William Newman

*Clinical Professors* L.E. Zimmerman (*Ophthalmic Pathology*), J.M. Blumberg, E.B. Helwig (*Dermatologic Pathology*), G.H. Reifstein

*Associate Professors* W.L. Marsh, Lois Platt (*Cytology*), Alexander Breslow, J.C. Smith

*Associate Clinical Professors* J.S. Howe, V.E. Martens, Theodore Winship, R.E. Palmer

*Assistant Professors* F.S. Jannotta, S.G. Kent

*Assistant Clinical Professors* W.F. Enos, Cornelia Hoch-Ligeti, L.W. Fix, Grace Guin, E.H. Zeitler, Marjorie Williams, C.B. Cook, D.R. Parkinson, I.D. Godwin, W.J. Jaffurs, M.A. Weinberger, Floris Garner (*Comparative Pathology*), Gloria Brennan

\* Staff of Instruction for the academic year 1967-68.  
† Required for medical students.



*Instructor* E.R. Burns (*Research—Experimental*)  
*Clinical Instructor* P.W. Lampert  
*Special Lecturer* L.C. Johnson

- 115-16 Introduction to Medical Science (1-1)** Marsh and Staff  
 Lectures for medical technology students on physiology, pathology, and medicine to accompany Pathology 119-20. (Academic year—1 hour a week)
- 117-18 Principles in Medical Technology (4-4)** Marsh and Staff  
 For medical technology students. Theories, principles, sources of error of methods used in clinical chemistry, clinical bacteriology, serology, hematology, clinical microscopy. (Academic year—4 hours a week)
- 119-20 Medical Technology Laboratory (10-10)** Marsh and Staff  
 Rotation through University Hospital pathology laboratories: hematology and urinalysis, 12 weeks; chemistry, 12 weeks; bacteriology and parasitology, 12 weeks; blood bank, 6 weeks; serology, 4 weeks; tissue pathology, 4 weeks. (35 hours a week for 50 weeks)
- \*201 Pathology (8)** Staff  
 Inflammations, degenerations, malformations, trauma, neoplasms. Pathology of organ systems; correlation with symptoms and physical signs. Gross and microscopic study of diseased tissues. Rotation on weekend autopsy calls. (Fall—12 hours a week)
- \*202 Diagnostic Conferences (1)** Peery, Gusack  
 (*Formerly Clinicopathologic Correlation Conference*)  
 Case studies demonstrating pathologic significance of major clinical symptoms and physical signs. (Spring—1 hour a week)
- 252 Forensic Pathology and Medical Jurisprudence (1)** Miller  
 Pathology of trauma and of chemical poisons. The physician in relation to the law: legal vs. ethical rights and responsibilities; investigation of death; legal problems in medicine. (Spring—1 hour a week)
- 254 Surgical Pathology I (1)** Newman and Staff  
 Organ changes in surgical diseases; correlation of gross and microscopic findings with clinical manifestations and prognosis. (Spring—1 hour a week)
- 256 Cells—Normal and Pathologic (1)** Jannotta, Duryee, Platt  
 Normal and abnormal cell structure, function, reproduction. Practical problems of cellular diagnosis in cytogenetics, exfoliative cytology, bone marrow studies. (Spring—1 hour a week)
- 258 Neuropathology (1)** Staff  
 Organ changes in diseases of central nervous system, including developmental disorders, degenerative diseases, neoplasms. (Spring—1 hour a week)

\* Required for medical students; open to limited number of graduate students.



- 260 **Obstetric and Gynecologic Pathology** (1) Jaffurs  
Organ changes in normal and abnormal pregnancy, including both the mother and the fetus. Diseases of female genital system. (Spring—1 hour a week)
- 262 **Problems in Experimental Cellular Pathology** (1) Duryee  
Cytological and biochemical aspects of cellular function in relation to normal and selected pathological conditions. (Spring—1 hour a week)
- 269-70 **Clinical Pathologic Conferences** (0) Staff  
Case histories presented and differential diagnosis discussed; clinical, laboratory, necropsy findings correlated. (Fall and spring—as arranged)
- 272 **Pathology in Medicine and Surgery** (2) Reifenstein  
Survey of current literature, with application of pathology to clinical medicine and surgery. Each student assigned an article a week, for study, written report, and group critique. (Fall and spring—2 hours a week)
- 274 **Medical Pathology** (2) Breslow, Miller  
Study of cases from the necropsy service at University Hospital, evaluating and interpreting gross and microscopic tissue changes and correlating them with clinical data. (Spring—2 hours a week)
- 276 **Seminars in Pathology** (2) Peery and Staff  
Conferences in anatomical pathology, conducted by, and primarily for, residents in pathology. Univ. Hosp. (Spring—2 hours a week)
- 279 **Ophthalmic Pathology I** (1) Zimmerman  
Basic science aspects of diseases of the eye. (Spring—1 hour a week)
- 280 **Surgical Pathology II** (4) Newman and Staff  
Surgical pathology service at University Hospital, examining specimens from current surgical cases, correlating with clinical manifestations. 4 students. Univ. Hosp. (Spring—6 hours a week)
- 281 **Surgical Pathology III** (2) Newman, Winship  
All types of surgical specimens; individual instruction in gross and microscopic diagnosis and clinical interpretation. Univ. Hosp. and Wash. Hosp. Center (Fall—3 hours a week)
- 282 **Ophthalmic Pathology II** (3) Zimmerman  
Diseases of the eye as revealed by gross and microscopic examination. Concurrent requisite: Pathology 279. 6 students. Armed Forces Inst. of Path. (Spring—4 hours a week)
- \*283 **Anatomical Pathology Clerkship** (5 or 10) Peery and Staff  
Necropsy and surgical pathology service. Univ. Hosp. (Spring—4 or 8 weeks)

\* Graduate students receive 5 semester hours of credit for each 4-week period and may receive up to 30 semester hours of credit for 6 months full-time. (Fall or spring—as arranged.)



- 284 Ophthalmic Pathology III (5)** Zimmerman  
Daily participation in service limited to pathology of the eye and its adnexa. 1 senior; 4-week elective periods. Armed Forces Inst. of Path. (Spring)
- 285 Clinical Pathology (10)** Martens  
Selected techniques of clinical chemistry, hematology, bacteriology. Student selects laboratory problem. 4 juniors or seniors; 8-week elective periods. Wash. Hosp. Center (Spring)
- 286 Biophysics: Electron Microscopy (10)** Zeitler  
Basic electron microscopy; preparation of tissues, alignment procedures, image interpretation. 2 juniors or seniors; 8-week elective periods. Armed Forces Inst. of Path. (Spring)
- 287 Clinical Pathology (5)** Marsh, Breslow  
Techniques in the clinical laboratory and interpretation of results, follow-up studies. 1 junior or senior; 4-week elective periods. Univ. Hosp. (Spring)
- 288 Clinical Cytology (5)** Platt  
Evaluation of cytologic smears, chiefly vaginal, as a screening procedure in cancer diagnosis. 1 junior or senior; 4-week elective periods. Univ. Cancer Clinic (Spring)
- 290 Clinical and Anatomical Pathology (5)** Cook  
Daily studies of surgical and necropsy pathology, including forensic pathology; clinical pathology projects, including hematology, isotopology, bacteriology. 1 junior or senior; 4-week elective periods. Fairfax Hosp. (Spring)
- 291 Experimental Cell Pathology: Cancer Research (5)** Duryee  
Experimental animal tumors; tissue culture, histological and cytological techniques, library assignments. 1 junior or senior; 4-week elective periods. Univ. Cancer Clinic (Spring)
- 292 Experimental Pathology: Enzymatic Changes in Human Tissues (5)** Hoch-Ligeti  
Distribution and concentration of lactic dehydrogenase, beta glucuronidase, and their isoenzymes in human tissues; limited participation in routine studies in pathology. Room and board furnished. 2 juniors or seniors; 4-week elective periods. V.A. Center, Martinsburg, W.Va. (Spring)
- 293 Clinical and Anatomical Pathology (5)** Palmer  
Participation in departmental activities, including clinical, surgical, and autopsy pathology; medico-legal autopsies. 1 junior; 4-week elective periods. Alexandria Hosp. (Spring)
- 294 Surgical Pathology IV (5)** Winship  
Preoperative examination of patients with tumors, pathologic examination of excised lesions; teaching conferences. 2 juniors or seniors; 4-week elective periods. Wash. Hosp. Center (Spring)



- 295 Comparative Pathology (5 to 30)** Garner and Staff  
For graduate students. Participation in veterinary pathology service, including wild and domestic animals. Prerequisite: Pathology 201. Five semester hours of credit for each 4-week period. Students may receive up to 30 semester hours of credit for 6 months full-time. Armed Forces Inst. of Path. (Fall or spring)
- 296 Surgical Pathology V (10)** Newman  
Evaluation of surgical specimens and correlation with clinical status of patient, description of gross and microscopic findings on assigned cases. 2 seniors; 8-week elective periods. Univ. Hosp. (Spring)
- 298 Necropsy Pathology (5)** Jannotta  
Organ changes in disease, gross and microscopic examinations, preparation of protocols. 2 juniors or seniors; 4-week elective periods. Univ. Hosp. (Spring)
- 299 Dermal Pathology (10)** Helwig  
Microscopic conferences, review of current material and study sets. 2 juniors or seniors; 8-week elective periods. Armed Forces Inst. of Path. (Spring)
- 398 Advanced Reading and Research (arr.)** Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1968)
- 399 Dissertation Research (arr.)** Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1968)

## Pediatrics\*

Professors R.S. Lourie (*Psychiatry*), F.P. Heald (*Chairman*)  
Clinical Professors W.S. Anderson, R.H. Parrott, L.E. Hoeck, W.A. Howard, J.A. Washington  
Associate Professors L.P. Scott III, Margaret Gutelius, S.L. Leikin, E.V. Soto, J.C. Houck (*Biochemistry*), A.M. Margileth  
Associate Clinical Professors T.E. Reichelderfer, William Stark (*Psychiatry*), S.I. Wolf  
Assistant Professors Wellington Hung, A.E. Marans, J.R. Puig, Leon Cytryn (*Psychiatry*), Ruth McKay (*Psychiatry*), Elma Denham (*Psychiatry*), Nasser Movassaghi, C.A. Rigg  
Assistant Clinical Professors Mabel Grosvenor, A.B. Coleman, R.E. Martin, J.H. Peacock, Jr., Mary Sartwell, C.F. Stiegler, H.G. Clark, Adrian Recinos, Jr., C.R. Webb, A.R. MacPherson, G.J. Cohen, Bennett Olshaker (*Psychiatry*), Stephen Mourat (*Psychiatry*), A.P. Simopoulos, Erwin Friedman (*Psychiatry-Psychology*), L.M. Greenberg (*Psychiatry*)

\* Staff of Instruction for the academic year 1967-68.



*Clinical Instructors* H.H. Diamond, R.H. Mitchell, R.O. Warthen, Emilie Black, R.H. Anderson, W.G. Preisser, H.T. Yates, Roger Bergstrom, Mary Fox, S.Z. Goldblatt, Hilary Millar, (*Psychiatry*), Harold Plotsky (*Psychiatry*), A.J. Modlin, Jean Lockhart, G.W. Daisley, Jr., Belinda Straight (*Psychiatry*), Agnes Schweitzer, G.W. Hardman, Jr., H.D. Knox, Frances Min, B.H. Ong, L.W. Perry, H.R. Gold, V.L. Guandolo, Iradj Mahdavi, J.L. Chamberlain III, Leonard Lefkowitz, R.D. PeBenito

**\*301 Pediatrics (1)**

Heald and Staff

Lectures and demonstrations on pathophysiology of the newborn. Infant nutrition; fundamentals of disease states in infants and children. Wash. Hosp. Center (Fall)

**\*302 Major Clinical Situations (Pediatrics) (2)**

Heald and Staff

Lectures and demonstrations on pediatric diagnosis and treatment. Children's Hosp. (Fall)

**\*303 Pediatric Clerkship (10)**

Heald and Staff

Full time, including night and holiday admissions, as part of Resident team; ward rounds; work in outpatient department and specialty clinics under Staff supervision; child psychiatry and child guidance, lectures, clinical conferences, grand rounds. Children's Hosp. (Fall and spring)

**\*304 Growth and Development (1)**

Lourie, Gutelius, and Staff

Prenatal, perinatal, postnatal factors influencing growth and development of the infant. Social, emotional, physical growth of infant and child. (Spring)

**380 Clinical Pediatrics (5)**

Puig

Participation in diagnostic studies and therapeutic procedures, rounds and conferences. 2 juniors or seniors; 4-week elective periods. Children's Hosp. (Spring)

**381 Pediatric Allergy (10)**

Howard

Introduction to pediatric allergy, clinics and wards, some experience in experimental techniques and preparation of extracts. 1 junior or senior; 8-week elective periods. Children's Hosp. (Spring)

**382 Pediatric Radiology (5)**

LoPresti

Diagnostic and therapeutic radiology, diagnostic procedures. 2 juniors or seniors; 4-week elective periods. Children's Hosp. (Spring)

**383 Clinical Pediatrics (5)**

Reichelderfer, Schweitzer

Participation in ward activities, including histories, physical examinations, laboratory studies on new patients; rounds and conferences; emphasis on preventive pediatrics. 4 juniors or seniors; 4-week elective periods. D.C. Gen. Hosp. (Spring)

**384 Newborn and Premature (10)**

Staff

Clinical studies in newborn care emphasizing hematologic problems and congenital malformations; daily rounds, conferences, research studies in

\* Required for medical students.



cytogenetics. 2 juniors or seniors; 8-week elective periods. Univ. Hosp. (Spring)

**385 Child Psychiatry (5)** Lourie

Diagnostic and follow-up studies on inpatients and outpatients; rounds, conferences, seminars; visits to related community facilities. 2 juniors or seniors; 4-week elective periods. Children's Hosp. (Spring)

**386 Pediatric Hematology (5)** Leikin

Clinical and laboratory studies of infants and children with hematologic disorders, bone marrow examinations, exchange transfusions. 1 senior; 4-week elective periods. Children's Hosp. (Spring)

**387 Clinical Pediatrics (5)** Soto

Care of newborn and children on inpatient basis; diagnostic studies, therapy; assigned reading. 2 juniors or seniors; 4-week elective periods. Fairfax Hosp. (Spring)

**388 Newborn and Premature (5)** Reichelderfer, Schweitzer

Care of newborn infant, emphasizing normal but including problem cases; assigned reading, rounds, conferences, seminars. 4 seniors; 4-week elective periods. D.C. Gen. Hosp. (Spring)

**389 Pediatric Cardiology (5)** Scott

Physical diagnosis of congenital and acquired heart diseases, interpretation of electrocardiograms and vectorcardiograms, cardiac catheterizations. Prerequisite: 1 month clerkship in medicine. 2 juniors or seniors; 4-week elective periods. Children's Hosp. (Spring)

**390 Birth Defects Clinic (1)** Staff

Outpatient service for infants and children with various congenital defects. 2 juniors. Children's Hosp. OPD (Fall)

**391 Pediatric Research (5 or 10)** Houck, Heald, and Staff

Pathophysiology and molecular biology of human growth and development. 2 juniors or seniors; 4- or 8-week elective periods. Children's Hosp. (Spring)

**392 Adolescent Medicine Clerkship (5 or 10)** Heald, Rigg

Study of the normal developmental problems of adolescence. Experience in the medical care of adolescents. 2 juniors or seniors; 4- or 8-week elective periods. Children's Hosp. (Spring)

## Pharmacology\*

Professor H.G. Mandel (*Chairman*)

Professorial Lecturers B.B. Brodie, F.E. Hahn

Associate Professors V.H. Cohn, Jr., Paul Mazel, K.S. Kim (*Research*), S.E. Fabro (*Research*)

Assistant Professors W.P. Weiss, W.R. Jondorf (*Research*), G.A. Hahn (*Research*), Philip Klubes (*Research*), J.A. Straw

\* Staff of Instruction for the academic year 1967-68.



**\*201 Pharmacology (8)**

Mandel and Staff

Lectures, laboratory, conferences on interaction of drugs and biological systems as a basis for rational therapy of disease. Prerequisite: biochemistry and physiology, or approval of Department. (Fall)

**252 Seminar: Clinical Pharmacology (2)**

Weiss

Problems in therapeutics; emphasis on drugs used in treatment of cardiovascular and infectious diseases. Participation in discussions and preparation of lectures. Enrollment limited. (1968-69 and alternate years—spring)

**254 Frontiers in Pharmacology (1)**

Mandel and Staff

Recent advances and fields of research in pharmacology. Most of the material presented by laboratory scientists from neighboring institutions. Medical and graduate students. (Spring)

**256 Molecular Pharmacology (2)**

F. Hahn

Current theory on action of drugs, especially chemotherapeutic agents, at molecular level. Effect of drugs on biosynthetic processes of the cell with respect to DNA, messenger RNA, transfer RNA, ribosomes, protein, cell wall, and intermediary metabolites. Factors which alter action of drugs, such as drug interactions and resistance. Medical and graduate students. (Spring)

**258 Cancer Chemotherapy (1)**

Mandel and Staff

Mechanisms by which drugs inhibit the growth of tumor cells. Medical and graduate students. (1968-69 and alternate years—spring)

**260 Introduction to Statistical Reasoning (1)**

Weiss and Staff

Application of statistical methods to biological and experimental questions; emphasis on use of statistics rather than arithmetic. (Spring)

**264 Pharmacological Research (6)**

Staff

Metabolism of narcotic and nonnarcotic analgesic agents, metabolism and mechanism of action of antibiotics and anticancer drugs, protein synthesis, molecular pharmacology, pharmacogenetics, adaptation in drug metabolism. 3 sophomores. (Spring—2 full days a week)

**†267 Pharmacological Research (arr.)**

Staff

Graduate students. (Fall and spring)

**†269 Pharmacology Seminar (1)**

Staff

Recent advances in pharmacology. Graduate students. (Fall and spring)

**272 Physiological Disposition of Drugs (3)**

Cohn, Davison

Fate of drugs in biological tissue. Absorption, distribution, chemical alteration, excretion of drugs; physical, chemical, and biological factors affecting these processes. Graduate and medical students; limited to 20. Prerequisite: Pharmacology 201. (1969-70 and alternate years—spring)

\* Required for medical students; open to graduate students.

† Content differs each time the course is offered; may be repeated once for credit toward a Master's degree.



- \*279 **Special Topics in Pharmacology** (arr.) Staff  
Selected aspects of drug action. (Fall and spring)
- 281 **Physiological Techniques in Pharmacology—Lecture** (2) Mazel, Straw  
Physiological techniques for obtaining information on mechanism and site of action of pharmacological agents. Graduate and medical students; limited to 20. Pharmacology 281 may be taken without 282. Prerequisite: Pharmacology 201. (1969-70 and alternate years—spring)
- 282 **Physiological Techniques in Pharmacology—Laboratory** (2) Mazel, Straw  
Accompanies Pharmacology 281. Prerequisite: Pharmacology 201. Prerequisite or concurrent registration: Pharmacology 281. (1969-70 and alternate years—spring)
- 283 **Biochemical Techniques in Pharmacology** (3) Cohn, Davison  
Lectures and laboratory. Theory and practice of modern biochemical techniques applicable to study of metabolic fate and mechanism of action of drugs. Graduate students. Prerequisite: Pharmacology 201. (1968-69 and alternate years—spring)
- 285 **Readings in Pharmacology** (1) Staff  
Medical students. Assigned reading and preparation of report. (Fall and spring)
- 286 **Research in Pharmacology** (arr.) Staff  
Medical students. Participation in experimental studies in pharmacology, particularly bacterial chemotherapy, cancer chemotherapy, or drug metabolism. (Fall and spring)
- 299-300 **Thesis Research** (3-3) Staff  
Required of Master's candidates. (Academic year—as arranged)
- 398 **Advanced Reading and Research** (arr.) Staff  
Limited to students preparing for the Doctor of Philosophy general examination. May be repeated for credit. (Fall and spring—as arranged; summer 1968)
- 399 **Dissertation Research** (arr.) Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit. (Fall and spring—as arranged; summer 1968)

## Physical Medicine and Rehabilitation†

Professor C.S. Wise (Chairman)  
Clinical Professor Morton Seidenfeld (Clinical Psychology)  
Associate Professors John Watt, Jr., A.F. Mastellone  
Assistant Clinical Professors P.A. Klieger, Giuseppe Balsamo, Inez Hill, A.B.C. Knudson, F.L. Wenger, G.J. Thorpe, Gloria Eng

\* Content differs each time the course is offered; may be repeated once for credit toward a Master's degree.

† Staff of Instruction for the academic year 1967-68.



**\*301 Advanced Physical Medicine (1)**

Staff

Lectures and demonstrations on various techniques. Clinical applications of physical medicine and rehabilitation integrated with teaching of associated medical and surgical specialties. (Fall)

**352 Physical Medicine and Rehabilitation (5)**

Wise, Watt

Participation in departmental procedures; examination and evaluation of patients requiring rehabilitation. 3 juniors or seniors; 4-week elective periods. Univ. Hosp. (Spring)

**380 Physical Medicine (2)**

Watt

Participation in clinical service for diagnosis and treatment of neuromuscular, skeletal, visceral disorders by physical means. 4 juniors. (Fall)

**395 Research (arr.)**

Staff

(Fall)

**Physiology†**

*Professor C.S. Tidball (Chairman), R.A. Kenny (Visiting)*

*Professorial Lecturers L.L. Langley, Leonard Laster*

*Associate Professors Elizabeth Tidball (Research), Shirley Johnson*

*Associate Professorial Lecturers P.G. Nelson, Q.L. Hartwig, R.J. Podolsky,*

*W.A. Hagins*

*Assistant Professors Marie Cassidy, Elizabeth Stephenson, T.K. Chowdhury,*

*M.J. Jackson*

*Assistant Professorial Lecturers Richard Moore, W.L. Haskell, Carl-Eric Elwin,*

*John Ross, Jr., Brunhild Stuerckow*

**‡201 Physiology (8)**

Staff

Lecture (6 hours), laboratory (6 hours), conference (2 hours). Cellular, organ system, and applied mammalian physiology. Prerequisite for graduate students: Anatomy 201 or equivalent, Biological Sciences 104, Biochemistry 201 or 221-22 (Biochemistry 222 may be taken concurrently), or consent of Chairman of Department. Nonmedical students please note that the first meeting of the course occurs one week before the start of University campus classes. (Spring—day)

**§221 Seminar (1)**

Stephenson

Staff and student presentations from literature. Present work discussed, experimental design and scientific deduction evaluated. Topics to be announced. Prerequisite: a reading knowledge of French or German. (Fall and spring)

\* Required for medical students.

† Staff of Instruction for the academic year 1967-68.

‡ Required for medical students; open to graduate students. Physiology 201 or equivalent is prerequisite to all other courses in Physiology.

§ Content differs each time the course is offered; may be repeated for credit.



- 251 **History of Medicine** (1) E. Tidball  
Survey of the great contributors to physiology and medicine in the context of the times in which they lived and worked. (Fall)
- 253 **Clinical Applications of Physiology** (1) C. Tidball  
Conference 1 hour a week. Emphasis on acid-base and fluid-balance physiology and their relation to clinical problems. (Fall)
- 255 **Introduction to Electrocardiography** (1) Caceres  
Offered jointly by Department of Physiology and the Public Health Service Instrumentation Field Station. Cardiac electrical activity, means used to record it, application of these principles to diagnosis of cardiac disease. (Fall)
- 257 **Evaluation of Medical Literature** (1) Stephenson  
Conference 1 hour a week. Provides the medical student with criteria for analyzing published medical and scientific reports. (Fall)
- 259 **Introduction to Electron Microscopy** (3) Cassidy  
Lecture (2 hours), laboratory as arranged. Basic theory of electron microscopy and its application to biological investigative studies. Limited registration. Admission by permission of instructor. (Fall)
- 261 **Gastrointestinal Physiology** (2) Staff  
Lecture or conference 2 hours a week. Physiological approach to such clinical problems as peptic ulcer, malabsorption, ulcerative colitis, hepatitis, and others. (Not offered 1968-69)
- 262 **Cardiovascular Physiology** (2) E. Tidball  
Lecture or conference 2 hours a week. An overview of cardiovascular physiology at an advanced level. (Not offered 1968-69)
- 263 **Endocrine Physiology** (2) Mortimore  
Lecture or conference 2 hours a week. Basic physiology underlying clinical derangements involving abnormal endocrine function. (Not offered 1968-69)
- 264 **Introduction to Experimental Medicine** (2) Laster  
Lecture or conference 2 hours a week. Recent research contributions to a better understanding of medicine. (Fall)
- 265 **Pathophysiology of Liver Disease** (2) H. Zimmerman  
Biochemical and physiological alterations in hepatic derangements. (1970-71 and every third year: fall)
- 271 **Electronic Instrumentation** (3) Chowdhury  
Lecture (2 hours), laboratory (2 hours). Fundamentals of electronics and their application to the measurement of physiological phenomena. Prerequisite: Mathematics 22; Physics 1, 2; and consent of instructor. (1969-70 and alternate years: fall)
- 281 **Experimental Gastrointestinal Physiology** (5) C. Tidball  
2 juniors or seniors; 4-week elective periods. School of Medicine. (Spring)



- 282 **Experimental Cellular Physiology** (5) Cassidy  
2 juniors or seniors; 4-week elective periods. School of Medicine.  
(Spring)
- 283 **Experimental Neuroendocrinology** (5) E. Tidball  
(Formerly *Experimental Neurophysiology*)  
2 juniors or seniors; 4-week elective periods. School of Medicine.  
(Spring)
- 284 **Experimental Biophysics** (5) Chowdhury  
2 juniors or seniors; 4-week elective periods. School of Medicine.  
(Spring)
- 285 **Experimental Hematology** (5) Johnson  
2 juniors or seniors; 4-week elective periods. V.A. Hosp. (Spring)
- \*295 **Research** (arr.) Staff  
By special arrangement with individual Staff members. Approximately  
4 clock hours in the laboratory for each semester hour credit. (Fall  
and spring)
- 299-300 **Thesis Research** (3-3)
- 398 **Advanced Reading and Research** (arr.) Staff  
Limited to students preparing for the Doctor of Philosophy general exami-  
nation. May be repeated for credit. (Fall and spring—as arranged;  
summer 1968)
- 399 **Dissertation Research** (arr.) Staff  
Limited to Doctor of Philosophy candidates. May be repeated for credit.  
(Fall and spring—as arranged; summer 1968)

## Psychiatry†

*Professors* Leon Yochelson (*Chairman*), J.E. Rankin  
*Clinical Professors* D.C. Cameron, D.M. Bullard, T.D. Noble, Sidney Berman,  
Morris Kleinerman, M. deG. Ruffin, Norman Taub, Samuel Yochelson  
(*Criminal Behavior*), D.L. Bazelon (*Socio-legal Aspects*), Leon Ferber, P.H.  
Gray, Paul Chodoff, H.A. Meyersburg, F.N. Waldrop, Stanley Yolles  
*Associate Clinical Professors* H.P. Laughlin, M.L. Adland, Anna Todd, S.L.  
Werkman, I.H. Kaiser, C.T. Bever, David Eden, Margaret Mercer (*Clinical  
Psychology*), S.I. Szara (*Psychopharmacology*), Hans Weil-Malherbe (*Neu-  
rochemistry*), Harold Weiner (*Experimental Psychology*), G.C. Salmoiraghi  
(*Neurophysiology and Neuropharmacology*), J.G. Rubin, E.S. Fleming, Jo-  
seph Abrahams, R.M. Greenberg, W.D. Kehne, R.W. Gans, A.M. Drum-  
mond, J.L. Sheridan, D.W. Harris, E.I. Kushner, J.H. Yacoubian, Jack  
Durell, John Kafka  
*Assistant Professors* Helen Percy (*Social Work*), H.M. Grigorian, R.M. Cole-  
man

\* Content differs each time the course is offered; may be repeated for credit.

† Staff of Instruction for the academic year 1967-68.



*Assistant Clinical Professors* Sarah Tenenblatt, J.B. Chassan (*Biostatistics*), R.A. Rogers, J.A. Farrell, H.B. Lehrman, N.C. Rintz, L.J. Duhl, F.G. Hilbert, J.T. English, Susannah Gourevitch (*Psychology*), I.D. Milowe, I.H. Marill, W.C. Johnson, R.A. Frank, Leslie Schaffer, A.H. Kiracofe, Jr., T.M. Mackenzie, R.N. Butler, J.H. Menetrez, Christine Kehne, M.A. Woodbury, W.H. Young, Jr., Bertram Brown, J.H. Bouma, B.L. Burris, W.J. Stockton, Spencer Gordon, Jr., Marjorie Creelman (*Psychophysiology*), C.C.H. Culander, V.J. D'Andrea, D.A. Lanham, J.T. Quattlebaum, T.D. Reynolds (*Experimental*), W.L. Taylor (*Experimental Psychology*), D.L. Tippet, Archibald Ward, Jr. (*Sociology*), P.S. Weisberg, W.G. Tompkins, Frances Thomas (*Social Work*), Seymour Rabinowitz, D.S. Sprague, Roger Peele, S.L. Auster, Gertrude Cotts, Brian Crowley, Margaret Garrett, H.A. Greenberg, H.A. Hoffman, Julius Hoffman, R.A. McElroy, B.P. McKaig, J.M. Post

*Clinical Instructors* W.E. Christopher, Jr., W.H. Dobbs, W.A. Hamman, G.D. Legler

*Special Lecturers* W.E. Barton, Reza Arasteh

\*301 **Psychiatry in the Practice of Medicine** (4) L. Yochelson and Staff

Normal personality development, psychopathology, psychosomatic disturbances, medical interviewing. Descriptions and clinical demonstrations of psychoneuroses, character disorders with presentation of their causes, courses, and treatment. (Spring)

\*302 **Clinical Clerkship** (5) Rankin and Staff

Supervised examination, diagnosis, treatment of outpatients and inpatients at University and St. Elizabeths hospitals; case conferences, seminars on psychiatric referral, "psychiatric" drugs, community resources. Psychiatry in general practice stressed. (Fall and spring)

382 **Clinical Psychiatry** (5) Waldrop

Clinical care of patients hospitalized for emotional and mental disturbances. 2 juniors or seniors; 4-week elective periods. St. Elizabeths Hosp. (Spring)

383 **Psychiatric Day-care** (10) Gans

Participation in program of psychiatric rehabilitation directed toward return of patient to productivity in his community. 2 juniors or seniors; 8-week elective periods. V.A. Mental Hygiene Clinic. (Spring)

384 **Geriatric Psychiatry** (5) Waldrop

Care and rehabilitative efforts with elderly inpatients with psychiatric and other incapacities. 1 junior or senior; 4-week elective periods. St. Elizabeths Hosp. (Spring)

385 **Schizophrenic Reactions** (5) Bullard

Psychotherapy and ward management of schizophrenic patients. 2 juniors or seniors; 4-week elective periods. Chestnut Lodge, Rockville, Md. (Spring)

\* Required for medical students.



- 386 Psychiatric Research (5)** Waldrop  
Research programs involving clinical and experimental investigations of human behavior. 2 juniors or seniors; 4-week elective periods. St. Elizabeths Hosp. (Spring)
- 387 Clinical Psychiatry (5)** Rankin  
Care of inpatients and outpatients; diagnostic evaluations; individual and group psychotherapies, somatic therapies. 1 junior or senior; 4-week elective periods. Univ. Hosp. (Spring)
- 388 Research: Chronic Patient (10)** Meyersburg  
Research into social, anthropological, psychological factors influencing long-term care of patients with chronic diseases. 2 juniors or seniors; 8-week elective periods. Univ. Hosp. (Spring)
- 390 Research: Psychiatric Aspects of Criminal Behavior (5)** S. Yochelson  
Social, anthropological, psychological factors producing criminal behavior. 2 seniors; 4-week elective periods. St. Elizabeths Hosp. (Spring)
- 391 Research: Constitutional Psychiatry (10)** S. Yochelson  
Comatotypy, genetics, encephalography, sensory deprivation; emphasis on the criminal. 2 seniors; 8-week elective periods. St. Elizabeths Hosp. (Spring)
- 392 Administrative Psychiatry (10)** Cameron  
Apprenticeship to administrator of large public mental hospital. St. Elizabeths Hosp. (Spring)
- 394 Marital-Premarital Counseling (2)** Abrahams  
Counseling techniques for the physician. 16 juniors. (Fall)
- 395 Psychotherapy (2)** Frank, Tompkins  
Supervision of outpatient psychotherapy. 4 juniors. (Fall)
- 396 Psychiatry in the Medical Specialties (2)** Drummond, Bever  
Common psychiatric problems in general practice of medicine and in surgical specialties. 16 juniors. (Fall)
- 397 Introduction to Psychoanalytic Thought (1)** Marill  
Basic course in Freudian theory. 8 juniors. (Fall)

### Radiology\*

*Professor W.W. Stanbro (Chairman)*

*Associate Professors C.F. Murphy, W.J. Nelson*

*Associate Clinical Professors H.J. Kicherer, J.M. LoPresti, R.F. Dobbins, John Maier, R.M. Caulk, L.C. Hamilton, C.W. Boyer, Jr.*

*Assistant Professors W.B. McAvoy, Richard Granke, L.W. Stanton, Wheeler Rung Fu*

\* Staff of Instruction for the academic year 1967-68.



*Assistant Clinical Professors* Charlotte Donlan, S.R. Bersack, H.L. Berman, J.T. Brennan, A.C. Wyman, D.B. Sodee (*Nuclear Medicine*), Bela Gondos, J.B. Johnston, Jr. (*Radiobiology*), Marion Faris, H.M. Hagen  
*Clinical Instructors* George Tievsky, U.V. Wilcox II, C.M. Weber, Zeki Erim, M.A. Thomas, Michael Vermess, G.A. Solack, James Burwell

\*301 **Radiology (1)**

Staff

X-ray production, methods of examination, normal and pathological X-ray findings of the various body systems, special studies, introduction to radiation therapy and radioisotopes. (Fall)

380 **Radiology (5)**

Murphy

Each student works with all department physicians sequentially. Daily film conferences. Each student discusses one diagnostic subject in depth, using films from the teaching file. All attend scheduled department conferences. 1 junior and 5 seniors; 4-week elective periods. Univ. Hosp. (Spring)

381 **Diagnostic and Therapeutic Radiology (5)**

†Schumacher

Observation in fluoroscopic procedures and participation in film reading sessions; observation of techniques and rationale of radiation therapy. 2 juniors or seniors; 4-week elective periods. Wash. Hosp. Center (Spring)

382 **General Radiology (5)**

‡Miller

Participation with the radiologist in diagnosis and therapy. Study in depth of approved subject. Room and board furnished. 1 junior or senior; 4-week elective periods. V.A. Center, Martinsburg, W. Va. (Spring)

## Surgery§

*Professors* Brian Blades (*Chairman*), C.T. Klopp (*Cancer*), G.S. Letterman (*Plastic*), P.C. Adkins (*Associate Chairman*)

*Clinical Professors* W.S. McCune, V.M. Iovine, Alec Horwitz, G.A. Higgins, Jr.

*Associate Professors* H.C. Pierpont, T.C. Alford, N.P.D. Smyth, J.G. Randolph, D.H. Glew, Jr., Don Wenger

*Associate Clinical Professors* J.R. Thistlethwaite, D.C. Wherry, E.A. Gould, Maxine Schurter, S.G. Mead (*Oral*), C.W. Hughes

*Assistant Professors* P.E. Shorb, Jr., N.T. Tsangaris, Allan Hall, J.R. Lilly, J.E. McClenathan

*Assistant Clinical Professors* L.B. Burk, Jr., William Ferguson, J.M. Keshishian, J.J. Weinstein, Isabella Harrison, J.T. Estes, Ernst Bremer, F.B. Brandt, J.W. Canter, J.B. Harrell, N.H. Isaacson, L.R. Perna, S.M. Kirson, Fernando Sacasa (*Oral*), M.W. Wolcott, T.M. Wright, Yeong-Cheol Koh

\* Required for medical students.

† Dr. Schumacher is connected with the Washington Hospital Center.

‡ Dr. Miller is connected with the V.A. Center, Martinsburg, W. Va.

§ Staff of Instruction for the academic year 1967-68.



*Instructors* W.P. Tunell, R.P. Altman, W.B. Berry, C.W. Wesselhoeft, Jr.  
*Clinical Instructors* C.D. Briggs, J.F. Conlon (*Oral*), Leon Gerber, B.G. Brown,  
 J.H. Sager, Gerald Inguagiato, J.E. Peterson, Charles Rickerich, J.R. Mc-  
 Clelland, R.D. Shapiro (*Oral*), G.E. White, Sheldon Holen (*Periodontics*), C.A.  
 Silva

*Special Lecturer* D.F. Lynch

**\*301 Lectures in Surgery (4)**

Staff

**\*302 Major Clinical Situations (Surgery) (3)**

Staff

Lectures and demonstrations in surgical diagnosis and treatment.

**\*303 Clinical Clerkship I (10)**

Staff

Twelve weeks at University, V.A., D.C. General hospitals, and Wash-  
 ington Hospital Center.

**\*304 Clinical Clerkship II (5)**

Staff

Extension of Clinical Clerkship I.

**\*305 Emergency Room and Warwick Clinic (5)**

Staff

**380 General Surgery I (5)**

Iovine

Participation in general care of surgical patients; assigned reading. 1 sen-  
 ior; 4-week elective periods. Univ. Hosp. (Spring)

**381 General Surgery II (5)**

McCune

Participation in general care of surgical patients, assigned reading, experi-  
 mental surgery for pancreatic disease. 2 juniors or seniors; 4-week elec-  
 tive periods. Univ. Hosp. (Spring)

**382 Head and Neck Surgery (5)**

Klopp

Study of new patients and follow-up of treated cases, minor surgical pro-  
 cedures, observation of operating room procedures; assigned reading.  
 1 senior; 4-week elective periods. Univ. Cancer Clinic (Spring)

**383 Thoracic Surgery Research (5)**

Blades, Adkins

Basic principles of research in thoracic surgery; assigned reading. 2 jun-  
 iors or seniors; 4-week elective periods. Univ. Hosp. (Spring)

**385 Experimental Surgery I (10)**

Glew

Participating in existing surgical research projects, assigned reading, ex-  
 perimental operative procedures. 2 juniors; 8-week elective periods.  
 Univ. Cancer Clinic (Spring)

**386 Experimental Surgery II (5 or 10)**

Pierpont

Participation in surgical research projects, assigned reading, experimental  
 operative procedures. 3 juniors or seniors; 4- or 8-week elective periods.  
 Univ. Cancer Clinic (Spring)

**387 General Surgery (5)**

Thistlethwaite

Supplemental clerkship experience in surgery rounds, diagnostic studies,  
 operational experience, preoperative and postoperative care; conferences

\* Required for medical students.



and seminars. 2 juniors or seniors; 4-week elective periods. D.C. Gen. Hosp. (Spring)

**389 Plastic Surgery (5)** Letterman

Basic aspects of plastic and reconstructive surgery; collateral reading. 1 junior or senior; 4-week elective periods. Univ. Hosp. (Spring)

**390 General Surgery (5)** Gould

Assignment to individual surgeon for rounds, diagnostic studies, operative procedures; conferences and seminars; radiologic and pathologic follow-up; assigned reading. 2 juniors or seniors; 4-week elective periods. Wash. Hosp. Center (Spring)

**391 General Surgery (5)** Higgins

Participation in total care program of surgical patients; daily rounds, conferences, seminars. 4 seniors; 4-week elective periods. V.A. Hosp. (Spring)

**393 General Surgery (10)** Hall

Surgical care program in a community hospital; emergency room service, including major trauma; pediatric surgery. 4 juniors or seniors; 8-week elective periods. Fairfax Hosp. (Spring)

**394 Pediatric Surgery (5)** Randolph

Participation in an active, closely supervised surgical service for infants and children, including congenital defects, cardiac surgery, trauma, and neoplasms. Diagnostic studies, preoperative and postoperative care, operating room procedures. 3 juniors or seniors; 4-week elective periods. Children's Hosp. (Spring)

**395 Experimental Surgery III (2)** Glew

Participation in existing surgical research projects, assigned reading, experimental operative procedures. 2 juniors. Univ. Cancer Clinic (Fall)

**396 Experimental Surgery IV (2)** Pierpont

Participation in surgical research projects, assigned reading, experimental operative procedures. 4 juniors. Univ. Cancer Clinic (Fall)

**399 Disaster Medicine (1)** Pierpont

Lectures and demonstrations showing management of mass casualties resulting from natural and unusual causes, including the effects of biologic warfare and nuclear explosions. (Fall)

## Urology\*

Professor L.R. Culbertson (Chairman)

Clinical Professor E.E. Ferguson

Associate Clinical Professors W.D. Jarman, F.T. Reuter

Assistant Clinical Professors Gilbert Ottenberg, G.R. MacDonald, H.A. Goldberg

\* Staff of Instruction for the academic year 1967-68.



*Clinical Instructors* H.D. Wolff, Jr., H.P. Dorman, W.D. Oldham, John Ke-nealy, F.P. Chiaramonte, Gyorgy Dudas-Gyorki, H.J. Klapproth, R.C. Rhame, R.E. Ware, W.L. Banfield, I.S. Young

**\*301 Urology (1)**

Culbertson and Staff

Covers entire field of urology including diagnosis, treatment, and morbid pathology.

**380 Clinical Urology I (5)**

Reuter

Instruction in outpatient and diagnostic urology, including cystoscopy and radiographic procedures. 1 junior or senior; 4-week elective periods. Univ. Hosp. (Spring)

**381 Clinical Urology II (5)**

Culbertson

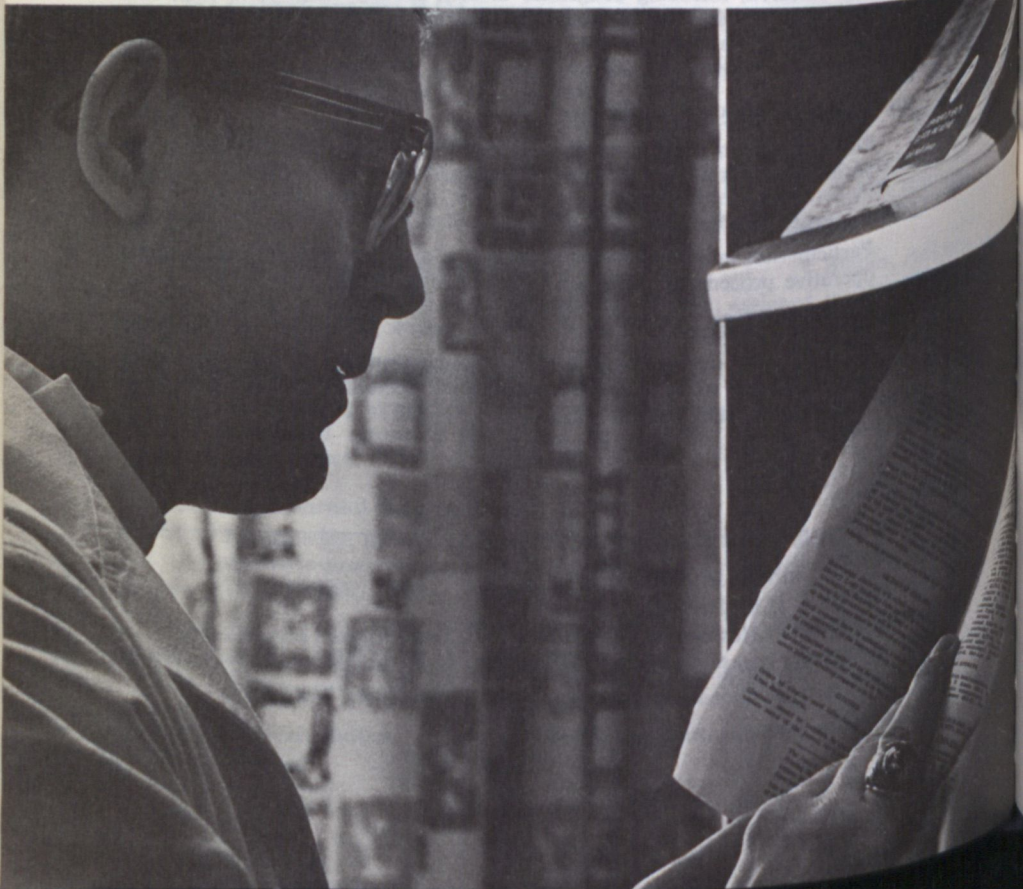
Observation of urologic conditions and procedures for diagnosis and treatment, radiologic and pathologic studies, endoscopy and surgery, collateral reading, weekly staff conference. 2 seniors; 4-week elective periods. Univ. Hosp. (Spring)

**382 Clinical Urology III (5)**

Culbertson

Observation of urologic conditions and procedures for diagnosis and treatment, radiologic and pathologic studies, endoscopy and surgery, collateral reading, weekly staff conference. 2 seniors; 4-week elective periods. V.A. Hospital (Spring)

\* Required for medical students.





## THE UNIVERSITY

### HISTORY AND ORGANIZATION

THE GEORGE WASHINGTON UNIVERSITY had its beginning in 1821 as The Columbian College in the District of Columbia. The name of the institution was changed in 1873 to Columbian University and in 1904 to The George Washington University. The debt of the University to George Washington whose name it bears is an intangible one.

George Washington, as President and as private citizen, had urgently insisted upon the establishment of a National University in the Federal City. There he hoped that, while being instructed in the arts and sciences, students from all parts of the country would acquire the habits of good citizenship, throwing off local prejudices and gaining at first hand a knowledge of the practice, as well as the theory, of republican government. To further the materialization of his hopes, Washington left a bequest of fifty shares of The Potomac Company "towards the endowment of a University to be established within the limits of the District of Columbia, under the auspices of the General Government, if that government should incline to extend a fostering hand towards it." The Congress never extended "a fostering hand." The Potomac Company passed out of existence, and Washington's bequest became worthless.

Fully conscious of Washington's hopes, but motivated primarily by a great missionary urge and the need for a learned clergy, a group of dedicated ministers and laymen sponsored a movement for the establishment of a college in the District of Columbia. Inspired largely by the zeal and energy of the Reverend Luther Rice, they raised funds for the purchase of a site and petitioned Congress for a charter. After much delay and amendment, Congress granted a charter which was approved by President Monroe on February 9, 1821. To safeguard the College's nonsectarian character it provided "That persons of every religious denomination shall be capable of being elected Trustees; nor shall any person, either as President, Professor, Tutor or pupil, be refused admittance into said College, or denied any of the privileges, immunities, or advantages therefore, for or on account of his sentiments in matters of religion."

During the entire time when the institution was known as Columbian College, its activities were centered on College Hill, a tract of forty-six and a half acres between the present Fourteenth and Fifteenth Streets extending north from Florida Avenue somewhat beyond Columbia Road. The Medical School was located downtown. For the better part of the Columbian University period, the buildings of the University were situated along H Street between Thirteenth and Fifteenth Streets. The Medical School group still remains there.



During the last half century the University's present plant has been developed in that section of the old First Ward familiarly known as "Foggy Bottom," between Nineteenth and Twenty-fourth Streets, south of Pennsylvania Avenue. Within a few squares are the White House, the Department of the Interior, the State Department, the World Bank, and many other governmental offices and international agencies. The area is not without its reminders of historic interest to the University. President Monroe, who signed the Charter, lived at 2017 Eye Street. The first President of the Board of Trustees, the Reverend Obadiah B. Brown, was for fifty years the pastor of a church at Nineteenth and Eye Streets, and Washington selected Twenty-third and E Streets as the site of the National University he had hoped to see established.

The University as it is now organized consists of Columbian College of Arts and Sciences (undergraduate); the Graduate School of Arts and Sciences; the professional schools, which include the National Law Center and the schools of Medicine, Engineering and Applied Science, Education, Government and Business Administration, and Public and International Affairs; the College of General Studies; the Division of University Students; and the Summer Sessions.

The George Washington University is privately endowed and is governed by a self-perpetuating Board of Trustees of which the president is an ex officio member.

#### ACADEMIC STATUS

The George Washington University is accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools. The University is on the approved list of the American Association of University Women and is a member of the College Entrance Examination Board. The Department of Chemistry is on the approved list of the American Chemical Society.

The School of Medicine has had continuous approval by the Council on Medical Education of the American Medical Association and the Association of American Medical Colleges. The degree of the School of Medicine is recognized by all State Examining Boards.

#### THE BOARD OF TRUSTEES 1967-68

Edward Karrick Morris, LL.D., *Chairman*  
Charles Emory Phillips, LL.B., LL.M., *Vice Chairman*  
James Matlack Mitchell, A.M., *Secretary*  
John W. Thompson, Jr., A.B., *Assistant Secretary*

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\*Edgar Robey Baker, A.B.  
George A. Butler, LL.B.  
Mortimer Maxwell Caplin, B.S., LL.B., J.S.D., LL.D.  
Leonard Carmichael, Ph.D., Sc.D., LL.D., Litt.D., L.H.D., D.C.L.  
Eugene Cassin Carusi, A.M., J.D.  
Miss Jacqueline Cochran, L.H.D., LL.D., Sc.D.  
\*Donald C. Cook, A.B., M.B.A., J.D., LL.M.  
\*Harry Filmore Dowling, A.B., M.D., Sc.D.  
Harry F. Duncan

\* Nominated by the Alumni.



- Lloyd Hartman Elliott, A.M., Ed.D., LL.D., *President of the University*,  
ex officio  
Newell Windom Ellison, A.B., LL.B., LL.D.  
Mrs. Katharine Graham, A.B.  
Melville Bell Grosvenor, B.S., Sc.D., LL.D.  
Brooks Hays, A.B., LL.B., LL.D., L.H.D., D.C.L., D.D., HH.D.  
John Edgar Hoover, LL.M., LL.D., Sc.D., D.C.L.  
Joseph D. Hughes, B.S., LL.B., LL.M., LL.D.  
Lewellyn A. Jennings  
David Matthew Kennedy, LL.B., A.B., LL.D.  
Franklin Jerome Lunding, LL.B., LL.D.  
Jeremiah Milbank, Jr., A.B., M.B.A.  
Godfrey Leon Munter, A.B., LL.B., LL.D.  
\*Robert Daniel Murphy, LL.B., LL.M., LL.D.  
Thornton W. Owen, B.S. in C.E., A.B.  
Sidney Dillon Ripley II, Ph.D., L.H.D., Sc.D.  
Carleton D. Smith  
Charles E. Smith  
Lewis L. Strauss, Sc.D., LL.D., L.H.D.  
John W. Warner  
\*John Johnston Wilson, LL.B.  
Watson W. Wise, Ph.B.  
Stephen Russell Woodzell, B.S. in E.E.  
\*James Otis Wright, B.S., LL.B.  
Eugene M. Zuckert, A.B., LL.B., LL.D., Sc.D.

#### HONORARY TRUSTEES

- Walter Maximillian Bastian, LL.B., LL.D.  
Robert Vedder Fleming, LL.D., *Chairman Emeritus*  
Charles Carroll Glover, Jr., A.M., LL.B., LL.D.  
Ulysses S. Grant III, B.S., Graduate United States Engineers School, LL.D.,  
Sc.D., L.H.D.  
Alfred Henry Lawson, LL.B., LL.D.  
John Keown McKee  
Benjamin Mosby McKelway, Litt.D.  
Sidney William Souers, A.B., LL.D.  
Alexander Wetmore, Ph.D., Sc.D.  
Charles Stanley White, M.D., Sc.D.  
Lloyd Bennett Wilson

#### OFFICERS OF ADMINISTRATION 1967-68

##### THE UNIVERSITY

- Lloyd Hartman Elliott, A.M., Ed.D., LL.D., *President*  
William Parkhurst Smith, Jr., A.B., M.B.A., *Executive Assistant to the President*  
Claud Max Farrington, A.M., *Assistant to the President for Special Projects*

\* Nominated by the Alumni.



Harold Frederick Bright, Ph.D., *Vice President for Academic Affairs*  
 Carl Hugo Walther, M.C.E., Ph.D., *Assistant Vice President for Academic Affairs*  
 Henry William Herzog, B.S., *Vice President and Treasurer*  
 Humbert John Cantini, Jr., LL.B., *Assistant Vice President and Assistant Treasurer*  
 William David Johnson, B.S., *Comptroller; Director of the Budget*  
 Margaret Payne Greene, B.S., *Assistant Treasurer, Contract Research*  
 Maurice Kingsley Heartfield, Jr., A.B., *Assistant Treasurer; Director, Office of Student Financial Aid*  
 John Collum Einbinder, A.B. in Govt., *Business Manager*  
 Warren Gould, A.M., *Vice President for Resources*  
 Louis Harkey Mayo, B.S., J.S.D., *Vice President for Advanced Policy Studies*  
 Paul Vernon Bissell, Ph.D., *Director of Student Services; Director of Veterans Education*

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Curtis Tufts Bacon, *Director of Personnel Services*  
 Richard Bernard Castell, A.B., M.D., *Director of Health Services*  
 Robert Faris, B.S., *Director of Men's Athletics*  
 Nelson Mead Head, B.S., *Administrator of the Office of Sponsored Research*  
 Frederick Russell Houser, A.M., *Registrar*  
 Elmer Louis Kayser, Ph.D., LL.D., *University Historian*  
 John Francis Latimer, Ph.D., Litt.D., *University Marshal*  
 Margaret Nolte, Ph.D., *Dean of Women*  
 Joseph Young Ruth, A.B., *Director of Admissions*  
 Ellwood Anthony Smith, B.S. in Ed., *Director of Alumni Relations*  
 Loretta May Stallings, A.M., Ed.D., *Director of Women's Athletics*  
 William Alexander Riddell Walker, A.M., *Adviser to International Students*  
 Donald Winkler, A.B., M.S., *Director of Public Relations*  
 Rupert Woodward, B.S., B.S. in L.S., A.M., *Director of Libraries*  
 Donald Young, A.M., *Dean of Men*

#### THE SCHOOL OF MEDICINE AND THE UNIVERSITY HOSPITAL

John Parks, M.S., M.D., *Dean of the Medical Center*  
 Clayton Bernard Ethridge, M.D., *Associate Dean of the Medical Center, for Postgraduate Education; Medical Director, University Hospital and Clinics*  
 Angus MacIvor Griffin, Ph.D., *Associate Dean of the Medical Center, for Administration and Planning*  
 Frank Nelson Miller, Jr., B.S., M.D., *Associate Dean of the Medical Center, for Student and Curricular Affairs*  
 Victor Frederick Ludewig, B.S., *Administrator of the University Hospital and Clinics*



## THE SCHOOL OF MEDICINE

### Faculty and Staff of Instruction\*

#### EMERITI

- Errett Cyril Albritton, *Professor Emeritus of Physiology*  
A.B. 1916, University of Missouri; M.D. 1921, Johns Hopkins University
- Harry Ford Anderson, *Professor Emeritus of Dermatology and Syphilology*  
M.D. 1924, University of Cincinnati
- Ralph Gregory Beachley, *Professor Emeritus of Clinical Public Health Practice*  
M.D. 1920, The George Washington University; Dr.P.H. 1926, University of Georgia
- Walter Andrew Bloedorn, *Professor Emeritus of Medicine*  
M.D. 1909, Creighton University; A.B. 1915, A.M. 1916, Sc.D. 1948, The George Washington University
- Daniel LeRay Borden, *Professor Emeritus of Clinical Surgery*  
M.D. 1912, B.S. in Med. 1916, A.M. 1917, Sc.D. 1958, The George Washington University
- Roger Morrison Choisser, *Professor Emeritus of Pathology*  
B.S. 1915, University of Chicago; M.D. 1917, Rush Medical College
- Ronald Atmore Cox, *Professor Emeritus of Ophthalmology*  
M.D. 1926, The George Washington University; A.B. 1928, Johns Hopkins University
- Henry Lauran Darnier, *Professor Emeritus of Clinical Obstetrics and Gynecology*  
A.B. 1916, Western Maryland College; M.D. 1920, Johns Hopkins University
- Paul Frederick Dickens, *Professor Emeritus of Clinical Medicine*  
M.D. 1908, University of Nashville
- William Herndon Jenkins, *Professor Emeritus of Otolaryngology*  
M.D. 1915, University of Maryland
- Chester Elwood Leese, *Professor Emeritus of Physiology*  
A.B. 1922, A.M. 1925, Ph.D. 1930, University of Iowa
- Edward Lewis, *Professor Emeritus of Clinical Pediatrics*  
M.D. 1918, The George Washington University
- Preston Alexander McLendon, *Professor Emeritus of Pediatrics*  
B.S. 1913, Wake Forest College; M.D. 1915, Columbia University
- Daniel Bruce Moffett, *Professor Emeritus of Otolaryngology*  
A.B. 1910, University of Richmond; M.D. 1915, University of Maryland

\* The Faculty and Staff of Instruction listed here and at the head of each department is for the academic year 1967-68.



- Margaret Mary Nicholson, *Professor Emeritus of Clinical Pediatrics in Residence*  
A.B. 1922, M.D. 1925, The George Washington University
- George Nordlinger, *Professor Emeritus of Clinical Obstetrics and Gynecology*  
A.B. 1918, M.D. 1922, The George Washington University
- Leland Wilbur Parr, *Professor Emeritus of Bacteriology*  
B.S. 1916, Ph.D. 1923, University of Chicago
- Frederick A. Reuter, *Professor Emeritus of Urology*  
M.D. 1916, The George Washington University
- Ernest Alfred Watson Sheppard, *Professor Emeritus of Clinical Ophthalmology*  
M.D., C.M. 1926, Queens University, Canada
- Thomas Carlton Thompson, *Professor Emeritus of Clinical Urology*  
B.S. in Med., M.D. 1920, The George Washington University
- Charles Stanley White, *Professor Emeritus of Surgery*  
M.D. 1898, Sc.D. 1946, The George Washington University

## ACTIVE

- Theodore Judson Abernethy, *Associate Clinical Professor of Medicine*  
B.S. 1925, Denison University; M.D. 1929, Johns Hopkins University
- Kristoff Abraham, *Clinical Instructor in Neurology*  
M.D. 1952, Budapest University, Hungary
- Joseph Abrahams, *Associate Clinical Professor of Psychiatry*  
M.D. 1939, Emory University
- Herbert Abramson, *Associate Clinical Professor of Medicine*  
A.B. 1924, A.M. 1925, M.D. 1935, The George Washington University
- John Pletch Adams, *Professor of Orthopedic Surgery*  
B.S. 1943, University of Missouri; M.D. 1945, Washington University
- Edward Adelson, *Associate Clinical Professor of Medicine*  
B.S. 1943, M.D. 1947, Tufts University
- Paul Charles Adkins, *Professor of Surgery*  
A.B. 1944, M.D. 1948, Johns Hopkins University
- Marvin Leon Adland, *Associate Clinical Professor of Psychiatry*  
B.S. 1941, M.D. 1943, University of Chicago
- Lewis Francis Affronti, *Associate Professor of Microbiology*  
A.B. 1950, A.M. 1951, State University of New York at Buffalo; Ph.D. 1958, Duke University
- Cosimo Ajmone Marsan, *Assistant Clinical Professor of Neurology*  
M.D. 1942, University of Torino, Italy
- Robert Wayne Albers, *Professorial Lecturer on Biochemistry of the Brain*  
B.S. 1950, University of Nebraska; Ph.D. 1954, Washington University
- Solomon Naphtali Albert, *Assistant Clinical Professor of Anesthesiology*  
A.B. 1936, M.D. 1940, American University at Beirut, Lebanon
- Henry Clifford Alexander, Jr., *Assistant Clinical Professor of Medicine*  
M.D. 1949, Duke University
- Theodore Crandall Alford, *Associate Professor of Surgery*  
A.B. 1944, Haverford College; M.D. 1947, Johns Hopkins University
- Frank Duane Allan, *Associate Professor of Anatomy*  
B.S. 1947, M.S. 1949, University of Utah; Ph.D. 1954, Louisiana State University
- Melvin Gustavus Alper, *Assistant Clinical Professor of Ophthalmology*  
A.B. 1943, M.D. 1945, University of Virginia
- Louis Katz Alpert, *Professor of Medicine*  
B.S. 1928, M.D. 1932, Yale University



- Seymour Alpert, *Professor of Anesthesiology*  
A.B. 1939, Columbia University; M.D. 1943, Downstate Medical Center, State University of New York
- Roy Peter Altman, *Instructor in Surgery*  
A.B. 1955, Colgate University; M.S. 1958, University of Rochester; M.D. 1961, New York Medical College
- Alice Altstatt, *Assistant Professor of Anesthesiology*  
A.B. 1949, Bryn Mawr College; A.M. 1952, M.D. 1956, Vanderbilt University
- James Francis Ambury, *Assistant Clinical Professor of Medicine*  
B.S. 1937, Fordham University; M.D. 1941, Georgetown University
- Harvey Hirsch Ammerman, *Clinical Professor of Neurological Surgery*  
B.S. 1939, M.D. 1943, The George Washington University
- Arthur James Anderson, *Clinical Instructor in Medicine*  
M.D. 1961, The George Washington University
- Robert Harper Anderson, *Clinical Instructor in Pediatrics*  
M.D. 1946, Duke University
- W. French Anderson, *Professorial Lecturer in Biochemistry*  
A.B. 1958, M.D. 1963, Harvard University; A.M. 1960, Cambridge University, England
- William Staton Anderson, *Clinical Professor of Pediatrics*  
A.B. 1927, Duke University; M.D. 1931, Johns Hopkins University
- John Lawrence Angel, *Professorial Lecturer in Anatomy and Anthropology*  
A.B. 1936, Ph.D. 1942, Harvard University
- Leonard Philip Appel, *Clinical Instructor in Medicine*  
A.B. 1953, M.D. 1957, New York University
- Ronald Alan Apter, *Assistant Clinical Professor of Medicine*  
M.D. 1958, The George Washington University
- Reza Arasteh, *Special Lecturer in Psychiatry*  
A.B. 1948, A.M. 1950, University of Tehran, Iran; Ph.D. 1953, Louisiana State University
- Irwin Ardham, *Assistant Clinical Professor of Medicine*  
A.B. 1948, New York University; M.D. 1954, New York Medical College
- Malcolm Stewart Arstenstein, *Assistant Clinical Professor of Medicine*  
A.B. 1951, Brown University; M.D. 1955, Tufts University
- Edwin Fjelde Aune, *Clinical Instructor in Medicine*  
M.D. 1944, State University of New York, Downstate Medical Center
- Simon Leo Auster, *Assistant Clinical Professor of Psychiatry*  
A.B. 1952, Yeshiva University; M.D. 1956, New York University
- James Albert Austin, *Clinical Instructor in Obstetrics and Gynecology*  
B.S. 1952, University of Southern California; M.D. 1956, The George Washington University
- William Ross Ayers, *Research Instructor in Medicine*  
B.S. 1957, M.D. 1961, Georgetown University
- Silas Babin, Jr., *Assistant Clinical Professor of Medicine*  
M.D. 1951, Louisiana State University
- Frank Solomon Bacon, *Associate Clinical Professor of Medicine*  
B.S. 1928, M.B. 1930, M.D. 1931, University of Minnesota
- James Michael Bacos, *Assistant Professor of Medicine*  
B.S. 1948, Virginia Polytechnic Institute; M.D. 1953, Duke University
- Robert Emil Badwey, *Clinical Instructor in Obstetrics and Gynecology*  
B.S. 1955, Franklin and Marshall College; M.D. 1959, University of Pittsburgh
- Alfred Baer, *Associate Clinical Professor of Medicine*  
A.B. 1942, Ohio State University; M.D. 1945, Johns Hopkins University
- William Eldridge Bageant, *Assistant Clinical Professor of Anesthesiology*  
M.D. 1939, The George Washington University
- Jack Sidney Bailey, *Assistant Research Professor of Medicine (Microbiology)*  
B.S. 1952, Hampton Institute; M.S. 1960, Howard University



- John Martyn Bailey, *Associate Professor of Biochemistry*  
B.S. 1949, Ph.D. 1952, University of Wales
- William Otis Bailey, Jr., *Associate Clinical Professor of Medicine*  
M.D. 1940, The George Washington University
- William George Ballinger, *Assistant Clinical Professor of Dermatology*  
A.B. 1948, Ohio State University; M.D. 1952, Western Reserve University
- Giuseppe Balsamo, *Assistant Clinical Professor of Physical Medicine and Rehabilitation*  
Laurea in Medicinae Chirurgia 1952, University of Rome, Italy
- William Landon Banfield, *Clinical Instructor in Urology*  
A.B. 1954, Princeton University; M.D. 1958, The George Washington University
- Samuel Harvard Barboo, Jr., *Assistant Professorial Lecturer in Epidemiology and Environmental Health*  
B.S. 1955, M.P.H. 1957, University of California, Berkeley; Ph.D. 1966, University of California, Los Angeles
- Lewellys Franklin Barker, *Clinical Instructor in Medicine*  
A.B. 1955, Princeton University; M.D. 1959, Johns Hopkins University
- Ann Birnbaum Barnett, *Instructor in Neurology*  
A.B. 1951, Sarah Lawrence College; M.D. 1956, Harvard University
- Solomon Efrem Barr, *Assistant Clinical Professor of Medicine*  
A.B. 1951, M.D. 1954, The George Washington University
- Andre Barrabini, *Clinical Instructor in Medicine*  
M.D. 1953, University of Paris, France
- John William Barrett, *Clinical Instructor in Neurological Surgery*  
M.D. 1958, The George Washington University
- Robert Henry Barter, *Professor of Obstetrics and Gynecology*  
B.S. 1937, M.D. 1940, University of Wisconsin
- Walter Earl Barton, *Special Lecturer in Psychiatry*  
B.S. 1928, M.D. 1931, University of Illinois
- Ronald George Basalyga, *Clinical Instructor in Medicine*  
A.B. 1960, Canisius College; M.D. 1964, University of Rochester
- Emil Herbert Bauersfeld, *Assistant Clinical Professor of Medicine*  
A.B. 1932, M.D. 1935, The George Washington University
- David Lionel Bazelon, *Clinical Professor of Psychiatry (Socio-legal Aspects)*  
B.S. in Law 1931, Northwestern University; LL.D. 1966, Colby College
- Mary Loretto Coleman Bazelon, *Instructor in Neurology*  
A.B. 1949, University of Chicago; A.M. 1957, Johns Hopkins University; M.D. 1960, The George Washington University
- Kenneth Louis Becker, *Assistant Professor of Medicine*  
A.B. 1952, University of Michigan; M.D. 1956, New York Medical College; Ph.D. 1963, University of Minnesota
- Virginia Patterson Beelar, *Assistant Clinical Professor of Medicine*  
A.B. 1933, M.D. 1936, University of Oregon
- Samuel Michael Belinsky, *Clinical Instructor in Obstetrics and Gynecology*  
A.B. 1955, University of Bridgeport; M.D. 1959, The George Washington University
- Robert Reid Belton, *Associate Clinical Professor of Medicine*  
A.B. 1944, Willamette University; M.D. 1948, The George Washington University; M.D. 1952, University of Zurich, Switzerland
- Ruth Boschwitz Benedict, *Associate Clinical Professor of Medicine*  
A.B. 1935, Wellesley College; M.D. 1939, New York University
- Maria Henke Benzinger, *Assistant Clinical Professor of Anesthesiology*  
M.D. 1941, University of Innsbruck, Austria; M.D. 1942, University of Berlin, Germany
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B.S., M.D. 1936, University of Virginia
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A.B. 1950, Western Maryland College; M.D. 1954, The George Washington University
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M.D. 1952, University of Budapest, Hungary
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M.D. 1936, The George Washington University
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A.B. 1937, B.S. in Med.Sc. 1940, M.D. 1941, Washington University
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B.S. 1951, M.D. 1954, University of Wisconsin
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- Arthur Bernard Rosenbaum, *Clinical Professor of Medicine*  
B.S. 1931, City College, New York; M.D. 1935, New York University



- Charles Alan Rosenberg, *Associate Clinical Professor of Medicine*  
A.B. 1942, M.D. 1944, Syracuse University
- Morris Hirsh Rosenberg, *Associate Clinical Professor of Medicine*  
A.B. 1938, M.D. 1941, The George Washington University
- Gladys Rosenstein, *Clinical Instructor in Medicine*  
A.B. 1939, University of Pennsylvania; M.D. 1944, Hahnemann Medical College
- Herman Rosenstein, *Clinical Instructor in Medicine*  
A.B. 1936, Temple University; A.M. 1937, University of Pennsylvania; M.D. 1942, Hahnemann Medical College
- John Ross, Jr., *Assistant Professorial Lecturer in Physiology*  
A.B. 1951, Dartmouth College; M.D. 1955, Cornell University
- Louis Ross, *Associate Clinical Professor of Medicine*  
M.D. 1937, The George Washington University
- Irwin Winn Rovner, *Assistant Clinical Professor of Obstetrics and Gynecology*  
A.B. 1948, M.D. 1953, University of Iowa
- Norman Hartley Rubenstein, *Assistant Clinical Professor of Medicine*  
M.D. 1950, The George Washington University
- Jesse Gallant Rubin, *Associate Clinical Professor of Psychiatry*  
B.S. 1953, Franklin and Marshall College; M.D. 1957, Yale University
- Lily Ruckstuhl, *Clinical Instructor in Medicine*  
M.D. 1954, University of Geneva, Switzerland
- Marshall deGraffenried Ruffin, *Clinical Professor of Psychiatry*  
B.S. 1932, University of Virginia; M.D. 1936, Harvard University
- Arthur Ruskin, *Associate Clinical Professor of Medicine*  
B.S. 1932, City College, New York; M.D. 1936, New York University
- Patricia Holly Russell, *Associate Professor of Anesthesiology*  
M.D. 1957, Emory University
- Joseph Aziz Sabri, *Assistant Clinical Professor of Otolaryngology*  
A.B. 1941, M.D. 1946, American University at Beirut, Lebanon
- Fernando Sacasa, *Assistant Clinical Professor of Oral Surgery*  
D.D.S. 1935, Georgetown University
- Josiah Sacks, *Clinical Instructor in Obstetrics and Gynecology*  
B.S. 1951, Providence College; M.D. 1955, Tufts University
- Harold Charles Sadin, *Assistant Clinical Professor of Medicine*  
A.B. 1948, Hamilton College; M.D. 1952, Union College and University
- John Harmer Sager, *Clinical Instructor in Surgery*  
A.B. 1948, Princeton University; M.D. 1952, The George Washington University
- Gian Carlo Salmoiraghi, *Associate Clinical Professor of Psychiatry (Neurophysiology and Neuropharmacology)*  
M.D. 1948, University of Rome, Italy; Ph.D. 1959, McGill University, Canada
- Zack Witten Sanders, *Clinical Instructor in Neurology*  
A.B. 1935, University of North Carolina; M.D. 1941, The George Washington University
- Melvin Wesley Sandmeyer, Jr., *Assistant Clinical Professor of Obstetrics and Gynecology*  
A.B. 1950, M.D. 1953, The George Washington University
- Thomas Stone Sappington, *Clinical Professor of Medicine*  
A.B. 1937, M.D. 1941, Harvard University
- Mary Katherine Laurence Sartwell, *Assistant Clinical Professor of Pediatrics*  
A.B. 1942, M.D. 1944, The George Washington University
- Charles Joseph Savarese, Jr., *Assistant Clinical Professor of Medicine*  
A.B. 1941, University of North Carolina; M.D. 1950, The George Washington University
- Raymond Scalettar, *Assistant Clinical Professor of Medicine*  
A.B. 1950, Columbia University; M.D. 1954, State University of New York



- Arnold Schaefer, *Professorial Lecturer in Biochemistry*  
B.S. 1939, South Dakota State University; M.S. 1941, Ph.D. 1947, University of Wisconsin
- Leslie Schaffer, *Assistant Clinical Professor of Psychiatry*  
M.B. 1942, M.B., Ch.B. 1948, University of London, England
- Heinz Hanns Eduard Scheidemandel, *Clinical Instructor in Otolaryngology*  
M.D. 1955, University of Erlangen, Germany
- Henry Oscar Schindelar, *Clinical Instructor in Medicine*  
B.S. 1952, Montana State College; M.S. 1954, University of Utah; M.D. 1958, Howard University
- Paul Schlein, *Clinical Instructor in Medicine*  
A.B. 1952, M.D. 1956, Cornell University
- Marvin Schneider, *Clinical Instructor in Medicine*  
B.S. 1956, The George Washington University; M.D. 1960, Howard University
- Richard Schoenfeld, *Clinical Instructor in Medicine; Associate University Physician*  
B.S. 1954, University of Wisconsin; M.D. 1958, State University of New York, Upstate Medical Center
- Cyril Augustus Schulman, *Associate Clinical Professor of Medicine*  
B.S. 1938, M.D. 1942, The George Washington University
- Maxine Ann Schurter, *Associate Clinical Professor of Surgery*  
A.B. 1944, Pomona College; M.D. 1951, The George Washington University
- Benson Charles Schwartz, *Clinical Instructor in Obstetrics and Gynecology*  
M.D. 1948, University of Maryland
- John Theodore Schwartz, *Assistant Clinical Professor of Ophthalmology*  
A.B. 1947, Dartmouth College; M.S. 1950, University of Notre Dame; M.D. 1955, Jefferson Medical College of Philadelphia; M.P.H. 1963, Harvard University
- Stanley Alvin Schwartz, *Clinical Instructor in Medicine*  
B.S. 1955, Alfred University; M.D. 1959, Union College and University
- Agnes Eva Schweitzer, *Clinical Instructor in Pediatrics*  
B.S. 1955, M.D., C.M. 1959, McGill University, Canada
- Lewis Pennington Scott III, *Associate Professor of Pediatrics*  
M.D. 1954, Jefferson Medical College of Philadelphia
- Morton Seidenfeld, *Clinical Professor of Physical Medicine and Rehabilitation (Clinical Psychology)*  
B.S. 1927, University of Washington; M.S. 1933, Ph.D. 1937, University of Pennsylvania
- Alvin Seltzer, *Assistant Clinical Professor of Medicine*  
B.S. 1937, M.D. 1941, University of Illinois
- Robert David Shapiro, *Clinical Instructor in Oral Surgery*  
B.S. 1960, D.D.S. 1962, Western Reserve University
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A.B. 1938, Cornell University; M.D. 1941, University of Illinois
- Samuel Hazen Shea, *Assistant Clinical Professor of Obstetrics and Gynecology*  
A.B. 1933, M.D. 1936, The George Washington University
- Thomas William Sheehy, *Associate Clinical Professor of Medicine*  
B.S. 1947, St. Vincent College; M.D. 1951, Syracuse University; M.S. 1955, Baylor University
- Lewis Breitbart Sheiner, *Clinical Instructor in Medicine*  
A.B. 1960, Cornell University; M.D. 1964, Yeshiva University
- Joseph Lee Sheridan, *Associate Clinical Professor of Psychiatry*  
A.B. 1939, M.D. 1943, Indiana University
- Sidney Shifrin, *Professorial Lecturer in Biochemistry*  
B.S. 1952, University of Maryland; Ph.D. 1957, Northwestern University
- Charles Utley Shilling, *Clinical Instructor in Medicine*  
M.D. 1955, The George Washington University
- Paul Edgar Shorb, Jr., *Assistant Professor of Surgery*  
A.B. 1951, Williams College; M.D. 1955, Johns Hopkins University



- Thomas Shworles, *Assistant Clinical Professor of Medicine (Social Psychologist)*  
A.B. 1956, Catholic University of America; A.M. 1959, The George Washington University
- James Seder Sidel, *Clinical Instructor in Medicine*  
A.B. 1960, Brown University; M.D. 1964, Tufts University
- George Jacob Siegel, *Clinical Instructor in Neurology*  
A.B. 1957, Yeshiva University; M.D. 1961, University of Miami
- Carlos Alberto Silva, *Clinical Instructor in Surgery*  
B.S. 1956, University of Puerto Rico; M.D. 1960, The George Washington University
- Harold Martin Silver, *Associate Clinical Professor of Medicine*  
A.B. 1946, M.D. 1949, Columbia University
- Kenneth Alan Simon, *Assistant Clinical Professor of Ophthalmology*  
A.B. 1952, University of Pennsylvania; M.S. 1955, M.D. 1957, Yale University
- Artemis Pinkerson Simopoulos, *Assistant Clinical Professor of Pediatrics*  
M.D. 1956, Boston University
- Maurice Arthur Sisen, *Assistant Clinical Professor of Medicine*  
A.B. 1944, M.D. 1947, The George Washington University
- James Glover Sites, *Professor of Obstetrics and Gynecology*  
M.D. 1947, The George Washington University
- Irene I-Lien Hsu Siu, *Associate Professor of Medicine*  
B.S. 1946, M.D. 1949, St. John's University, China
- Albert Sjoerdsma, *Special Lecturer on Internal Medicine*  
B.S. 1945, Ph.D. 1948, M.D. 1949, University of Chicago
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- Benjamin Williams Smith, *Associate Professor of Biochemistry*  
B.S. 1940, Virginia Polytechnic Institute; M.S. 1947, Ph.D. 1951, The George Washington University
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B.S. 1956, M.S. 1959, Ph.D. 1964, University of Maryland
- John Chandler Smith, *Associate Professor of Pathology*  
B.S. 1941, M.D. 1944, University of Oregon
- Nicholas Patrick Dillon Smyth, *Associate Professor of Surgery*  
B.S. 1948, M.B., Ch.B. 1949, University College, Dublin, Ireland; M.S. 1954, University of Michigan
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A.B. 1952, University of Michigan; M.D. 1956, Western Reserve University
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M.D. 1960, The George Washington University
- Joel Solomon, *Lecturer in Obstetrics and Gynecology (Genetics)*  
B.S. 1953, Boston College; M.S. 1957, Johns Hopkins University; Ph.D. 1963, University of Wisconsin
- Emilio Vicente Soto, *Associate Professor of Pediatrics*  
B.S. 1926, M.D. 1934, University of Havana, Cuba; M.D. in Ped. 1936, University of Pennsylvania
- Peter Soyster, *Assistant Clinical Professor of Obstetrics and Gynecology*  
M.D. 1948, The George Washington University
- Eugene Lewis Speck, *Lecturer in Microbiology*  
A.B. 1958, Brandeis University; M.S. 1961, University of Massachusetts; Ph.D. 1966, The George Washington University
- David Samuel Sprague, *Assistant Clinical Professor of Psychiatry*  
M.D. 1959, Indiana University
- William Woodrow Stanbro, *Professor of Radiology*  
M.D. 1938, Washington University



- Larry Wayne Stanton, *Assistant Professor of Radiology*  
A.B. 1956, M.D. 1959, Indiana University
- William Stark, *Associate Clinical Professor of Pediatric Psychiatry*  
A.B. 1939, New York University; M.D. 1943, University of Louisville
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A.B. 1955, Bowdoin College; M.D. 1959, Johns Hopkins University
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B.S. 1943, M.S. 1950, M.D. 1958, University of Michigan
- Edward Steers, Jr., *Professorial Lecturer in Biochemistry*  
B.S. 1959, Ph.D. 1963, University of Pennsylvania
- Elizabeth Weiss Stephenson, *Assistant Professor of Physiology*  
B.S. 1947, University of Chicago; Ph.D. 1964, The George Washington University
- Harold Stevens, *Professor of Neurology*  
B.S. 1933, Pennsylvania State University; A.M. 1934, Ph.D. 1937, M.D. 1941, University of Pennsylvania
- Steele Fuller Stewart, Jr., *Clinical Instructor in Obstetrics and Gynecology*  
A.B. 1950, Carleton College; M.D. 1959, University of Pennsylvania
- Charles Frederick Stiegler, *Assistant Clinical Professor of Pediatrics*  
A.B. 1936, M.D. 1940, New York University
- William James Stockton, *Assistant Clinical Professor of Psychiatry*  
M.D. 1956, University of Oklahoma
- Myer Harold Stolar, *Associate Clinical Professor of Medicine*  
B.S. 1936, The George Washington University; M.D. 1941, Georgetown University
- William Leete Stone III, *Assistant Clinical Professor of Medicine*  
A.B. 1945, Amherst College; M.D. 1947, The George Washington University
- Belinda Crompton Straight, *Clinical Instructor in Pediatric Psychiatry*  
M.D. 1952, New York University
- James Ashley Straw, *Assistant Professor of Pharmacology*  
B.S. 1958, Ph.D. 1963, University of Florida
- Donald Harrison Stubbs, *Clinical Professor of Anesthesiology*  
A.B. 1929, A.M. 1931, M.D. 1932, The George Washington University
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Diploma of the Faculty of Science 1954, University of Giessen, West Germany; Doctor of the Faculty of Science 1959, University of Munich, West Germany
- Samuel Jacob Nathan Sugar, *Associate Clinical Professor of Medicine*  
Phar.G. 1931, M.D. 1938, The George Washington University
- Garrett Michael Swain, *Assistant Clinical Professor of Neurological Surgery*  
M.D. 1945, The George Washington University
- Stephen Istvan Szara, *Associate Clinical Professor of Psychiatry (Psychopharmacology)*  
Arbitur 1941, D.Sc. 1950, M.D. 1951, University of Budapest, Hungary
- Stanley Jerome Talpers, *Assistant Clinical Professor of Medicine*  
A.B. 1948, M.D. 1953, University of Colorado
- Irene Gorski Tamagna, *Professor of Medicine*  
M.D. 1943, Woman's Medical College of Pennsylvania
- Nelson Monroe Tart, *Assistant Clinical Professor of Obstetrics and Gynecology*  
B.S. 1949, Wake Forest College; M.D. 1955, The George Washington University
- Norman Taub, *Clinical Professor of Psychiatry*  
B.S. 1937, M.D. 1941, University of Chicago
- Robert George Taylor, *Assistant Clinical Professor of Medicine*  
B.S. 1933, Dickinson College; M.D. 1938, University of Pennsylvania



- Wilson Lewis Taylor, *Assistant Clinical Professor of Psychiatry (Experimental Psychology)*  
A.B. 1930, Morningside College; A.M. 1937, University of Iowa; M.S. 1951, Tulane University of Louisiana; Ph.D. 1954, University of Illinois
- Ira Rockwood Telford, *Professor of Anatomy*  
A.B. 1931, A.M. 1933, University of Utah; Ph.D. 1942, The George Washington University
- Sarah Shtoffer Tenenblatt, *Assistant Clinical Professor of Psychiatry*  
A.B. 1942, M.D. 1944, University of California, Berkeley
- James Richard Thistlethwaite, *Associate Clinical Professor of Surgery*  
B.S. 1943, University of Richmond; M.D. 1947, Duke University
- Andree Raymonde Thomas, *Clinical Instructor in Medicine*  
B.S., A.B. 1950, P.C.B. 1951, M.D. 1960, University of Paris, France
- Frances Bagwell Thomas, *Assistant Clinical Professor of Psychiatry (Social Work)*  
A.B. 1961, M.S.W. 1963, University of North Carolina
- Lawrence Jay Thomas, *Associate Clinical Professor of Medicine*  
B.S. 1934, New York University; M.D. 1938, The George Washington University
- Martin Alfred Thomas, *Clinical Instructor in Radiology*  
B.S. 1948, Purdue University; M.D. 1952, Indiana University
- Charles Waters Thompson, *Associate Clinical Professor of Medicine*  
M.D. 1941, The George Washington University
- Earle Brosius Thompson, *Clinical Instructor in Medicine*  
B.S. 1945, Franklin and Marshall College; M.D. 1945, University of Pennsylvania
- George John Thorpe, *Assistant Clinical Professor of Physical Medicine and Rehabilitation*  
A.B. 1956, M.D. 1960, Western Reserve University
- Charles Sparks Thurston, *Clinical Instructor in Dermatology*  
B.S. 1953, Virginia State College; M.D. 1958, Meharry Medical College
- Howard Erwin Ticktin, *Associate Professor of Medicine*  
A.B. 1950, M.D. 1954, The George Washington University
- Charles Stanley Tidball, *Henry D. Fry Professor of Physiology*  
A.B. 1950, Wesleyan University; M.S. 1952, University of Rochester; Ph.D. 1955, University of Wisconsin; M.D. 1958, University of Chicago
- Mary Elizabeth Tidball, *Associate Research Professor of Physiology*  
A.B. 1951, Mount Holyoke College; M.S. 1955, Ph.D. 1959, University of Wisconsin
- George Tievsky, *Clinical Instructor in Radiology*  
B.S. in Phar. 1939, M.D. 1943, The George Washington University
- Donn Lloyd Tippet, *Assistant Clinical Professor of Psychiatry*  
M.D. 1947, Ohio State University
- Peter Tishler, *Professorial Lecturer on Inherited Metabolic Disease*  
A.B. 1959, Harvard University; M.D. 1963, Yale University
- Elijah White Titus, Jr., *Clinical Instructor in Obstetrics and Gynecology*  
M.D. 1952, The George Washington University
- Anna Coyne Todd, *Associate Clinical Professor of Psychiatry*  
A.B. 1928, M.D. 1932, University of Wisconsin
- William Garland Tompkins, *Assistant Clinical Professor of Psychiatry*  
B.S. 1949, M.D. 1955, Howard University
- David Michael Tormey, *Assistant Clinical Professor of Medicine*  
B.S. 1944, College of the Holy Cross; M.D. 1948, New York Medical College
- George Anthony Tralka, *Clinical Instructor in Medicine*  
B.S. 1949, M.D. 1956, Georgetown University
- Janet Travell, *Associate Clinical Professor of Medicine*  
A.B. 1922, Wellesley College; M.D. 1926, Cornell University
- Carleton Raymond Treadwell, *Professor of Biochemistry*  
A.B. 1934, Battle Creek College; M.S. 1935, Ph.D. 1939, University of Michigan



- Howard Pettit Treichler, *Assistant Clinical Professor of Obstetrics and Gynecology*  
M.D. 1946, The George Washington University
- William MacLohon Tribble, *Assistant Clinical Professor of Otolaryngology*  
A.B. 1943, Princeton University; M.D. 1950, The George Washington University; M.S. in Med. 1956, University of Pennsylvania
- Nelson Perez Trujillo, *Clinical Instructor in Medicine*  
B.S. 1955, Baldor Academy, Cuba; M.D. 1962, Tulane University of Louisiana
- Neofytos Theodore Tsangaris, *Assistant Professor of Surgery*  
B.S. 1952, Duke University; M.D. 1956, The George Washington University
- Pierre Tulou, *Special Lecturer in Medicine*  
M.D. 1943, University of Paris, France
- William Patrick Tunell, *Instructor in Surgery*  
B.S. 1955, University of Notre Dame; M.D. 1959, Cornell University
- Arthur Turk, *Clinical Instructor in Medicine*  
B.M.E. 1958, Cooper Union; M.S. 1960, University of Southern California; M.D. 1964, New York University
- Raymond William Turner, *Clinical Instructor in Medicine*  
A.B. 1954, Amherst College; M.D. 1958, Yale University
- Sidney Udenfriend, *Professorial Lecturer on Intermediary Metabolism*  
B.S. 1939, City College, New York; M.S. 1942, Ph.D. 1948, New York University
- Herbert Andrew Urweider, *Assistant Professor of Ophthalmology*  
A.B. 1954, Bowdoin College; M.D. 1958, McGill University, Canada
- George Vartkes Vahouny, *Associate Professor of Biochemistry*  
B.S. 1953, M.S. 1955, Ph.D. 1958, The George Washington University
- David Leo VerLee, *Clinical Instructor in Ophthalmology*  
M.D. 1962, M.S. 1966, University of Michigan
- Michael Vermess, *Clinical Instructor in Radiology*  
M.D. 1958, University of Vienna, Austria
- Josef Karel Viktora, *Associate Professor of Medicine (Biochemistry)*  
B.S. 1950, Ph.D. 1953, Charles University, Czechoslovakia
- John Vinyard, Jr., *Assistant Clinical Professor of Epidemiology and Environmental Health*  
B.S. 1949, M.S. 1950, University of Missouri; M.P.H. 1953, University of California, Berkeley
- Boris Vlalukin, *Instructor in Medicine*  
M.D. 1961, University of Belgrade, Yugoslavia
- Robert Stephen Waldman, *Clinical Instructor in Medicine*  
A.B. 1957, University of Pennsylvania; M.D. 1961, Georgetown University
- Francis Neil Waldrop, *Clinical Professor of Psychiatry*  
A.B. 1946, University of Minnesota; M.D. 1950, The George Washington University
- James Christopher Walsh, *Assistant Clinical Professor of Obstetrics and Gynecology*  
A.B. 1941, M.D. 1945, Georgetown University
- John Walter Walsh, *Assistant Clinical Professor of Medicine*  
B.S. 1938, St. Francis College; M.D. 1942, Downstate Medical Center, State University of New York
- Donald Walters, *Associate Clinical Professor of Obstetrics and Gynecology*  
B.S. 1939, M.D. 1943, University of Virginia
- Archibald Ward, Jr., *Assistant Clinical Professor of Psychiatry (Sociology)*  
B.S. 1933, North Carolina State University at Raleigh; B.D. 1937, Crozer Theological Seminary; Ph.D. 1947, University of Maryland
- Robert Edward Ware, *Clinical Instructor in Urology*  
M.D. 1953, Medical College of Virginia



- Robert Orr Warthen, *Clinical Instructor in Pediatrics*  
M.D. 1944, The George Washington University
- John Augustine Washington, *Clinical Professor of Pediatrics*  
A.B. 1924, Virginia Military Institute; B.S. 1926, University of Virginia; M.D. 1930, Johns Hopkins University
- Joseph Hicks Watson, *Assistant Clinical Professor of Medicine*  
B.S. 1940, University of Florida; M.D. 1943, Hahnemann Medical College
- John Watt, Jr., *Associate Professor of Physical Medicine and Rehabilitation*  
M.D. 1947, Johns Hopkins University
- Mary Falorsi Watt, *Associate Professor of Medicine*  
M.D. 1950, Johns Hopkins University
- James Winston Watts, *Professor of Neurological Surgery*  
B.S. 1924, Virginia Military Institute; M.D. 1928, University of Virginia
- Benny Waxman, *Assistant Professor of Obstetrics and Gynecology*  
M.D. 1957, University of Western Ontario, Canada
- Blair McWhorter Webb, *Assistant Clinical Professor of Otolaryngology*  
M.D. 1955, University of Virginia
- Charles Richard Webb, *Assistant Clinical Professor of Pediatrics*  
B.S. 1943, Canisius College; M.D. 1946, Georgetown University
- Charles Malcolm Weber, *Clinical Instructor in Radiology*  
M.D. 1951, Georgetown University
- George Davis Weickhardt, *Assistant Clinical Professor of Neurology*  
M.D. 1939, The George Washington University
- Hans Weil-Malherbe, *Associate Clinical Professor of Psychiatry (Neurochemistry)*  
M.D. 1929, University of Heidelberg, Germany; M.S. 1940, D.Sc. 1945, University of Durham, England
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B.S. 1946, University of Pittsburgh; M.D. 1948, Johns Hopkins University
- Morris Aaron Weinberger, *Assistant Clinical Professor of Pathology*  
B.S. 1942, M.D. 1946, Tufts University
- Harold Weiner, *Associate Clinical Professor of Psychiatry (Experimental Psychology)*  
B.B.A. 1953, City College, New York; A.M. 1957, Ph.D. 1960, University of Maryland
- Jacob Joseph Weinstein, *Assistant Clinical Professor of Surgery*  
Phar.G. 1930, B.S. 1934, M.D. 1936, University of Maryland
- Paul Stephen Weisberg, *Assistant Clinical Professor of Psychiatry*  
A.B. 1952, Harvard University; M.D. 1958, Marquette University
- Harold Weiss, *Assistant Professor of Medicine*  
A.B. 1954, New York University; M.D. 1959, Chicago Medical School
- William P. Weiss, *Assistant Professor of Pharmacology*  
M.D. 1956, Columbia University
- Herbert Weissbach, *Special Lecturer on Vitamins*  
B.S. 1953, City College, New York; M.S. 1955, Ph.D. 1957, The George Washington University
- Isaac Weiszer, *Clinical Instructor in Medicine*  
B.S. 1956, M.D. 1960, University of Illinois
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A.B. 1934, University of Wisconsin; M.D. 1937, Marquette University; M.S. 1956, Georgetown University; LL.B. 1962, The George Washington University
- Francis Liell Wenger, *Assistant Clinical Professor of Physical Medicine and Rehabilitation*  
B.S. 1943, M.D. 1947, Georgetown University
- Sidney Lee Werkman, *Associate Clinical Professor of Psychiatry*  
A.B. 1948, Williams College; M.D. 1952, Cornell University



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A.B. 1955, Dartmouth College; M.D. 1959, Tufts University
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A.B. 1949, M.D. 1952, The George Washington University
- George Erhardt White, *Clinical Instructor in Surgery*  
A.B. 1954, M.D. 1957, The George Washington University
- William Whitmore, Jr., *Assistant Professor of Medicine*  
M.D. 1948, Medical College of Virginia
- Henry Sindos Wicker, *Clinical Instructor in Ophthalmology*  
B.S. 1948, Xavier University; M.D. 1953, Howard University
- Russell Ralph Widner, *Clinical Instructor in Ophthalmology*  
A.B. 1959, M.D. 1961, University of Iowa
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M.D. 1939, The George Washington University
- Richard Wallace Wilkinson, *Associate Clinical Professor of Ophthalmology*  
A.B. 1925, M.D. 1928, The George Washington University; M.S. in Med. 1932, University of Pennsylvania
- Robert Shaw Wilkinson, *Assistant Clinical Professor of Medicine*  
A.B. 1950, Dartmouth College; M.D. 1955, New York University
- Jonathan Marshall Williams, *Clinical Professor of Neurological Surgery*  
M.D. 1938, University of Chicago
- Marjorie Joan Williams, *Assistant Clinical Professor of Pathology*  
M.D. 1943, University of Bristol, England
- Elliott Charles Wilner, *Clinical Instructor in Neurology*  
A.B. 1958, Columbia University; M.D. 1962, The George Washington University
- Thomas Ashton Wilson, *Assistant Clinical Professor of Obstetrics and Gynecology*  
A.B. 1942, M.D. 1944, The George Washington University
- Alan William Winshel, *Clinical Instructor in Obstetrics and Gynecology*  
A.B. 1948, Temple University; M.D. 1952, Hahnemann Medical College
- Theodore Winship, *Associate Clinical Professor of Pathology*  
A.B. 1931, M.D. 1937, University of Nebraska
- Karl Wipplinger, *Assistant Professor of Medicine*  
M.D. 1953, University of Vienna, Austria
- Charles Samuel Wise, *Professor of Physical Medicine and Rehabilitation*  
B.S. 1936, M.D. 1939, New York University
- Philip Witorsch, *Clinical Instructor in Medicine*  
A.B. 1958, M.D. 1962, New York University
- Mark Walton Wolcott, *Assistant Clinical Professor of Surgery*  
A.B. 1937, Lehigh University; M.D. 1941, University of Pennsylvania
- Stanley Irving Wolf, *Associate Clinical Professor of Pediatrics*  
B.S. 1947, M.D. 1948, Georgetown University
- Frederick William Wolff, *Professor of Medicine*  
M.B., B.S. 1946, M.D. 1957, Durham University, England
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M.D. 1929, University of Virginia
- Michael Aime Woodbury, *Assistant Clinical Professor of Psychiatry*  
Ph.B. 1942, University of Paris, France; A.B. 1945, M.D. 1951, Harvard University
- George Leonard Wright, Jr., *Assistant Professor of Microbiology*  
A.B. 1959, Albion College; M.S. 1962, Ph.D. 1966, Michigan State University
- Thomas Mahlon Wright, *Assistant Clinical Professor of Surgery*  
A.B. 1946, Washington and Lee University; M.D. 1951, University of Virginia



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M.B. 1959, National Taiwan University
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A.B. 1939, Cornell University; M.D. 1943, New York University
- Jean Haroutian Yacoubian, *Associate Clinical Professor of Psychiatry*  
A.B. 1947, M.D. 1951, American University at Beirut, Lebanon
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M.D. 1941, University of Virginia
- Leon Yochelson, *Professor of Psychiatry*  
A.B. 1938, M.D. 1942, State University of New York at Buffalo
- Samuel Yochelson, *Clinical Professor of Psychiatry (Criminal Behavior)*  
B.S. 1926, A.M. 1927, State University of New York at Buffalo; Ph.D. 1930, M.D. 1936, Yale University
- Stanley Yolles, *Clinical Professor of Psychiatry*  
A.B. 1939, Brooklyn College; A.M. 1940, Harvard University; M.D. 1950, New York University; M.P.H. 1957, Johns Hopkins University
- Ira Sanders Young, *Clinical Instructor in Urology*  
A.B. 1955, Lafayette College; M.D. 1959, The George Washington University
- William Hurlburt Young, Jr., *Assistant Clinical Professor of Psychiatry*  
B.S. 1942, Harvard University; M.D. 1945, University of Michigan
- Elmar Heinz Zeitler, *Assistant Clinical Professor of Pathology*  
Ph.D. 1953, University of Würzburg, Germany
- Hyman Joseph Zimmerman, *Professor of Medicine*  
A.B. 1936, University of Rochester; A.M. 1938, M.D. 1942, Stanford University
- Lorenz Eugene Zimmerman, *Clinical Professor of Ophthalmic Pathology*  
A.B. 1943, M.D. 1945, The George Washington University
- Mervin Harvey Zimmerman, *Clinical Instructor in Ophthalmology*  
M.D. 1959, University of Toronto, Canada
- Edward Zimmermann, *Associate Clinical Professor of Obstetrics and Gynecology*  
B.S. 1927, University of Dayton; M.D. 1931, St. Louis University
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B.S. 1943, University of Massachusetts; M.D. 1947, Hahnemann Medical College; Dr.P.H. 1961, London School of Hygiene and Tropical Medicine, England

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M.D. 1963, University of Madrid, Spain
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B.S. 1962, University of Utah; M.D. 1966, The George Washington University
- James Alford, *Assistant in Surgery*  
A.B. 1959, M.D. 1966, University of North Carolina
- Angelo Anaclerio, *Assistant in Ophthalmology*  
B.S. in Phar. 1958, M.D. 1962, University of Florida
- Anthony Edward Anderson III, *Assistant in Obstetrics and Gynecology*  
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A.B. 1955, Union College and University; M.D. 1965, Loma Linda University
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M.D. 1966, Jefferson Medical College of Philadelphia
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M.D. 1958, University of Santo Tomas, Philippines
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M.D. 1963, University of Paris, France
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B.S. 1944, M.D. 1949, Georgetown University
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M.D. 1957, University of Santo Tomas, Philippines
- Eric David, *Assistant in Orthopedic Surgery*  
M.D. 1956, University of the Philippines
- Carlos Garcia de Paredes, *Assistant in Surgery*  
A.B. 1959, DePauw University; M.D. 1963, Cornell University
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A.B. 1953, St. Anselm's College; M.D. 1965, Georgetown University
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B.S. 1960, Union College and University; M.D. 1964, Cornell University
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B.S. 1952, M.B., B.S. 1956, Durham University, England
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A.B. 1960, Smith College; M.D. 1964, State University of New York, Downstate Medical Center
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M.D. 1963, University of San Carlos, Guatemala
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M.D. 1963, National Taiwan University
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B.S. 1961, University of Bombay, India; M.S. 1965, University of Minnesota
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M.D. 1954, Hebrew University, Israel
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M.D. 1963, University of Michigan
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M.D. 1959, Christian Medical College, Panjab University, India
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M.D. 1964, Howard University
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B.S. 1961, M.D. 1965, Medical School of Geneva, Switzerland
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- Gerhart Ramirez Schon, *Assistant in Plastic Surgery*  
M.D. 1960, University of Puerto Rico
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B.S. 1952, Birmingham-Southern College; M.S. 1954, Emory University
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B.S. 1959, University of Maryland
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- William Charles Silberman, *Assistant in Pathology*  
A.B. 1958, M.D. 1961, The George Washington University
- Joseph Snyder, *Assistant in Ophthalmology*  
M.D. 1962, Jefferson Medical College of Philadelphia
- Robert Edward Sobel, *Thomas Bradford Sanders Fellow in Biochemistry*  
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- Gordon Tripp, *Assistant in Psychiatry*  
M.D. 1961, Duke University
- Alberta Margarette Young Vallis, *Assistant in Psychiatry*  
M.D. 1962, Howard University
- Luis Villarreal, *Assistant in Obstetrics and Gynecology*  
M.D. 1963, University of Nuevo León, Mexico
- Olmedo Villavicencio, *Fellow in Pediatrics*  
M.D. 1962, Central University, Ecuador
- Frank Virnelli, *Assistant in Surgery*  
A.B. 1960, B.M.S. 1961, Dartmouth College; M.D. 1963, Harvard University
- James Wells Voell, *Assistant in Psychiatry*  
M.D. 1959, Marquette University
- Thomas Walker, *Assistant in Surgery*  
B.S. 1958, M.D. 1963, Marquette University
- Herrick Warren, *Assistant in Surgery*  
B.M.E. 1960, Cooper Union; M.D. 1964, New York University
- Frederick Arthur Weinhardt, *Fellow in Microbiology*  
B.S. 1963, Valparaiso University; M.S. 1965, Ohio State University
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- Roberta Diane Whiting, *Fellow (Predoctoral Trainee) in Physiology*  
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- Robert Marion Wilson, *Assistant in Medicine*  
B.S. 1959, M.D. 1966, The George Washington University
- Hock Yeoh, *Assistant in Medicine*  
A.B. 1961, Ripon College; M.D. 1966, University of Rochester
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M.D. 1964, University of Tehran, Iran
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B.S. 1960, City College, New York
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## Library

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# THE SCHOOL OF MEDICINE RECORD 1967-68

## Degrees Conferred

### DOCTOR OF MEDICINE

JUNE 4, 1967

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Constance Urciolo Battle, District of Columbia  
A.B. 1963, Trinity College, D.C.  
William Stuart Battle, Jr., District of Columbia  
B.S. 1960, College of Charleston  
Thomas Arnold Bensinger, Virginia  
B.S. 1963, Georgetown University  
Michael Leonard Berman, Maryland  
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A.B. 1963, University of Washington  
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Craig Marvin Brewer, California  
A.B. 1963, University of Washington  
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B.S. 1959, Lafayette College  
M.S. 1961, Massachusetts Institute of Technology  
Bruce Ira Brodtkin, Maryland  
A.B. 1963, Lafayette College  
Ronald Bayard Brown, Virginia  
A.B. 1962, Ohio Wesleyan University  
Stephen Lamoni Carr, Utah  
B.S. 1964, University of Utah  
Wayne Lyman Chan, California  
A.B. 1960, Stanford University  
Terry Paul Clemmer, Virginia  
(With distinction)  
B.S. 1964, Brigham Young University  
Burton Harry Cohn, District of Columbia  
B.S. in Phar. 1960, University of Pittsburgh

Talmadge DeWitt Cooper III, District of Columbia  
A.B. 1964, The George Washington University  
Alvin Pete Cormack, Montana  
B.S. 1963, University of Montana  
Dennis Boyd Daughters, Utah  
Gregory Richard D'Onofrio, New York  
B.S. 1963, College of the Holy Cross  
Paul Shattuck Drohan, New York  
A.B. 1963, Washington and Jefferson College  
Richard Reed Drummond, Maryland  
A.B. 1964, The George Washington University  
Robert Leslie Erickson, Virginia  
(With distinction)  
A.B. 1958, DePauw University  
Russell Charles Ewing II, Arizona  
B.S. 1963, University of Arizona  
Michael Francis Farmer, New York  
A.B. 1963, San Francisco State College  
Dennis Joseph Feen, Maryland  
B.S. 1963, Bates College  
José Luis Fernández-Marchese, Puerto Rico  
A.B. 1963, Johns Hopkins University  
Harry Stephen Fletcher, New Jersey  
B.S. 1963, Mount St. Mary's College, Md.  
Frank John Forlini, Jr., New Jersey  
B.S. 1963, Villanova University  
William Elmer Forsythe III, Ohio  
A.B. 1963, Western Reserve University  
Alan Clifford Foster, Pennsylvania  
A.B. 1963, Franklin and Marshall College  
Ernest Raymond Gerfin, Pennsylvania  
A.B. 1963, Franklin and Marshall College  
Michael John Gothelf, New York  
A.B. 1963, Hobart College  
Martha Sumners Granger, Virginia  
A.B. 1960, Bryn Mawr College  
Robert Jay Gubler, Utah  
B.S. 1963, University of Utah



- Hedrick Baur Hanson, Indiana  
A.B. 1963, University of Washington
- Glenn Lee Haswell, Oklahoma  
A.B. 1963, DePauw University
- Evan Davis Jones, Pennsylvania  
Jacob Robert Karas, Massachusetts  
A.B. 1964, University of Massachusetts
- Mary Musselman Kass, Maryland  
A.B. 1964, The George Washington University
- Donald George Kaufman, Rhode Island  
B.S. in Phar. 1962, University of Rhode Island
- Jerry Howard Kover, New York  
A.B. 1963, Brooklyn College
- Edward Lincoln Krufky, New York  
A.B. 1963, New York University
- William Augustus Laughrun, Jr., Maryland  
A.B. 1955, Wake Forest College
- Michael Steven Lebowitz, New York  
A.B. 1963, University of Pennsylvania
- Richard Leslie Levin, Pennsylvania  
A.B. 1963, Franklin and Marshall College
- Bertram Sidney Liebross, New York  
B.S. 1962, Brooklyn College
- John Eric Liljenquist, Maryland  
(With distinction)  
B.S. 1963, Brigham Young University
- Frances Joyce Lipman, Maryland  
A.B. 1963, Yeshiva University
- Robert Allen Liss, Maryland  
(With distinction)  
A.B. 1964, The George Washington University
- Arthur Creig MacArthur, Virginia  
B.S. 1963, Brigham Young University
- Ivan Barry Mahady, Pennsylvania  
B.S. 1963, University of Scranton
- Herbert Simon Maier, New York  
A.B. 1963, Brooklyn College
- Michael Mainardi, New Jersey  
B.S. 1963, Georgetown University
- Charles Emil Manetz, Maryland  
B.S. in Phar. 1963, St. John's University, N.Y.
- Alice Marie Martinson, District of Columbia  
(With distinction)  
A.B. 1964, The George Washington University
- Stephen Sherwood Marvin, California  
A.B. 1963, University of Southern California
- John Cordell McCabe, District of Columbia  
A.B. 1963, University of North Carolina
- Craig Scott McCune, Utah  
A.B. 1962, University of Utah
- Billy Curtis McDavid, Maryland  
A.B. 1962, University of California, Davis
- Lawrence Howard Miller, Ohio  
B.S. 1962, B.S. in Ed. 1963, Ohio State University
- Stanley Gary Morrison, Pennsylvania  
A.B. 1963, Temple University
- Leslie Rodney Naman, California  
A.B. 1963, University of California, Los Angeles
- Sheldon Nassberg, New York  
B.S. 1963, University of Rhode Island
- Pat Marshall Orrock, California  
A.B. 1963, University of California, Riverside
- Chester Woodward Osborn, New York  
A.B. 1963, Columbia University
- Thomas Joseph Paolino, Jr., Rhode Island  
A.B. 1963, Brown University
- Ann L. Parker, District of Columbia  
A.B. 1963, University of California, Berkeley
- Alfred George Peters, California  
A.B. 1958, University of California, Berkeley
- Robert Edward Prager, South Carolina  
A.B. 1963, Duke University
- Andrew Joseph Presto III, New York  
B.S. 1963, Duke University
- Robert Leonard Joseph Sampson, Massachusetts  
A.B. 1963, Bates College
- Robert Clarence Saunders, Virginia  
A.B. 1962, University of Washington
- Frederick Dolezal Schirmacher, District of Columbia  
A.B. 1963, Johns Hopkins University
- Lawrence Victor Schoenfeld, New York  
A.B. 1963, Princeton University
- Barbara Ensfield Sherwin, District of Columbia  
B.S. 1959, Antioch College
- David Bart Simon, New Jersey  
Edward Glen Southwick, Virginia  
B.S. in Phar. 1962, University of Utah
- Ruth Lebo Steerman, Maryland  
Joan Sommers Steinkuller, Maryland  
A.B. 1964, The George Washington University
- Paul Gilbert Steinkuller, Virginia  
A.B. 1963, Duke University
- Michael Jon Sylvester, Illinois  
B.S. 1963, University of Wisconsin
- George Stephen Tabor, California  
A.B. 1963, University of Vermont
- William Frederic Thompson, New York  
B.S. 1963, City College, New York
- Jean Musey Thorne, Maryland  
B.S. in Phar. 1958, The George Washington University
- Lorence Wain Trick, California  
Clyde Marquis Weaver, Virginia
- John Raymond Whiteman, Maryland  
Dennis Alan Wight, Virginia  
(With distinction)
- Art Bong Wong, California  
A.B. 1963, University of California, Berkeley
- Paul Edward Wood, New Jersey  
A.B. 1963, Drew University
- Daniel Carlton Zaworski, Ohio  
Paul Stanley Zimmons, New York  
B.S. in Phar. 1963, Union University

## Students Registered 1967-68

### FIRST YEAR

Abbott, Richard L.  
B.S. 1967, Tufts University

N.Y. Adam, George  
A.B. 1967, New York University

N.Y.



Aldrich, Stephen M. A.B. 1967, Whitman College	Wash.	Gerstein, Jared D. A.B. 1967, New York University	N.Y.
Allen, Robert J. B.S. 1967, Brigham Young University	Utah	Gibbons, Gary R. B.S. 1967, Utah State University of Agriculture and Applied Science	Utah
Allgaier, Wayne B.S. 1967, Brigham Young University	Va.	Gibson, Douglas W. B.S. 1966, Wagner College	N.Y.
Babcock, Terence L. B.S. 1967, The George Washington University	Md.	Glowitz, Robert J. B.S. 1967, University of Maryland	Md.
Barnes, Patricia J. A.B. 1966, Gettysburg College	N.J.	Goldstein, Howard S. A.B. 1967, Colgate University	N.J.
Bikowski, Joseph B., Jr. A.B. 1967, LaSalle College	Md.	Goodman, Clifford J., Jr. Attended Arizona State University	Ariz.
Boyd, William D. II B.S. 1967, University of Maryland	Md.	Gorman, Barry C. B.S. 1967, Tufts University	Conn.
Brancaccio, Michael B.S. 1967, Fairfield University	N.Y.	Greenwood, Mark W. A.B. 1967, University of Utah	Utah
Brener, George A. A.B. 1967, Boston University	Mass.	Gregg, David L. A.B. 1966, Northwestern University	Calif.
Browne, Allen F. A.B. 1967, Brown University	Calif.	Griffin, Ronald A. A.B. 1967, The George Washington University	D.C.
Brunt, Roger S. B.S. 1967, Brigham Young University	Idaho	Grogan, Thomas M. A.B. 1967, University of Virginia	Va.
Bush, Frank J. A.B. 1967, University of Maine	Mass.	Gromet, Michael A. A.B. 1967, New York University	N.Y.
Carson, Culley C. B.S. 1967, Trinity College, Conn.	Conn.	Gross, Howard J. B.S. 1967, Tufts University	N.Y.
Chabalko, John J. B.S. 1967, Muhlenberg College	Pa.	Hanes, Verna E. Attended The George Washington University	Md.
Charlton, Brian L. A.B. 1967, Western Maryland College	Md.	Harris, Robert J. Attended The George Washington University	Md.
Chrisman, Allan K. A.B. 1967, Lafayette College	Md.	Herrera, Anayansi H. Attended Canal Zone College	Panama
Clark, John L. A.B. 1967, Franklin and Marshall College	Md.	Hollins, Mitchell L. A.B. 1967, Western Reserve University	N.Y.
Cleary, John B. B.S. 1967, Niagara University	N.Y.	Holmes, John S. A.B. 1967, San Fernando Valley State College	Calif.
Cleveland, Marcia C. B.S. 1967, Parsons College	Va.	James, William S. A.B. 1967, Johns Hopkins University	N.J.
Coleman, Joseph B.S. 1967, Mount St. Mary's College, Md.	N.J.	Jan, Ronald G. B.S. 1965, University of California, Berkeley	Calif.
Corr, Charles A. A.B. 1967, Wesleyan University	Conn.	Kline, Philip S., Jr. A.B. 1965, University of Texas	D.C.
Costa, Jack M. A.B. 1967, Gettysburg College	N.J.	Kuhr, Susan E. A.B. 1967, Yeshiva University	Ohio
Crawford, Joseph A. B.S. in E.E. 1960, Case Institute of Technology	N.Y.	Kurstin, Ronald D. A.B. 1967, Tulane University of Louisiana	D.C.
Crossland, Stanley G. B.S. in E.E. 1964, Columbia University	Va.	Lee, Martin A.B. 1966, Columbia University	N.Y.
Dantzic, Paul I. Attended Rensselaer Polytechnic Institute	N.Y.	Levy, Arnold G. Attended The George Washington University	Del.
Darr, David L. B.S. 1967, Muhlenberg College	N.J.	Lojko, Edwin P. A.B. 1967, University of Virginia	Mass.
Delmonico, Francis L. B.S. 1966, Mount St. Mary's College, Md.	N.Y.	Longo, Jane S. A.B. 1967, University of Maine	Maine
Dicus, Paul E. Attended University of Arizona	Ariz.	McBeath, John B. Attended San Jose State College	Nev.
Ellis, Madonna A. B.S. 1964, Duke University	Maine	Mendelson, Michael A.B. 1965, C.W. Post College	N.Y.
Fine, Paul M. Attended The George Washington University	Md.	M.S. 1967, Rutgers, the State University	N.Y.
Fitz-Henley, Norman H. Attended City College, New York	Mass.	Minars, Norman A.B. 1967, New York University	Hawaii
Frank, Sidney A. A.B. 1967, Bowdoin College	Mass.	Moritsugu, Kenneth P. A.B. 1967, University of Hawaii	Tenn.
Furlow, Thomas W., Jr. Attended The George Washington University	Md.	Newton, Roger A.B. 1967, Yale University	Pa.
Gardner, James S. B.S. 1967, Trinity College, Conn.	Mass.	Owens, David E. A.B. 1964, Wesleyan University	N.J.
Garner, Steven C. A.B. 1967, University of Massachusetts	Mass.	Pash, Robert M. A.B. 1967, Gettysburg College	N.J.
Gens, John P., Jr. B.S. 1967, Trinity College, Conn.	Conn.	Pett, Stephen D. B.S. 1967, Seton Hall University	N.J.



Polk, Norman O.	D.C.	Starkweather, Roger J.	Va.
A.B. 1967, Harvard University		A.B. 1967, Northwestern University	N.Y.
Potenza, Anthony R.	N.Y.	Strauss, Barry L.	
Attended University of Pittsburgh		A.B. 1967, Cornell University	Thailand
Pugatch, Robert D.	N.Y.	Tan, Edwin C.	
A.B. 1967, Johns Hopkins University		B.S. 1967, Mount Union College	N.Y.
Rainey, Edward C.	Nebr.	Tauber, Ira	
B.S. 1967, The George Washington University		A.B. 1967, Brooklyn College	Md.
Reed, Barry S.	Wash.	A.B. 1967, Bryn Mawr College	N.J.
A.B. 1967, University of Washington		Ungar, James R.	
Rein, Richard A.	Md.	A.B. 1967, The George Washington University	El Salvador
A.B. 1967, University of Rochester		Urrutia-S., Carlos O.	
Reisman, Jerald L.	Ohio	B.S. 1966, Georgetown University	Md.
B.S. 1967, University of Michigan		Van Devanter, Stephen H.	D.C.
Romig, Bruce	Va.	Attended The George Washington University	
B.S. 1967, Duke University		Van Meter, Keith W.	D.C.
Rosenberg, Robert L.	N.J.	A.B. 1967, Miami University	
Attended The George Washington University		Vienner, Robert S.	Ohio
Ross, David B.	N.Y.	A.B. 1967, University of Pennsylvania	
B.S. 1967, Cornell University		Watt, Albert J.	N.Y.
Ruben, Richard S.	Pa.	A.B. 1967, Brown University	
A.B. 1967, Northwestern University		Weiss, Richard W.	N.J.
Schlachter, Steven A.	N.J.	A.B. 1966, Cornell University	
B.S. 1967, St. Peter's College, N.J.		Whitley, Richard J.	Md.
Schramm, Melinda M.	Pa.	A.B. 1967, Duke University	Calif.
B.S. 1967, Wheaton College, Ill.		Williams, Terry E.	
Schulman, Brian M.	N.Y.	B.S. 1967, University of Maryland	
Attended The George Washington University		Woodward, Roger S.	Wash.
Shapiro, Leslie A.	N.Y.	A.B. 1966, Stanford University	
A.B. 1967, New York University		Yip, Larry	Va.
Smith, Howard N.	N.J.	B.S. 1967, University of Washington	
B.S. 1967, St. Peter's College, N.J.		Yoder, Paul T.	N.J.
Sonne, David D.	N.J.	B.S. 1967, Eastern Mennonite College	
Attended University of Utah		Zieminski, John J.	
Spector, Robert H.	N.Y.	B.S. 1967, Fordham University	
A.B. 1967, Franklin and Marshall College			

## SECOND YEAR

Akerle, Flavius A.	Nigeria	Christian, Donna-Marie T.	Virgin Islands
A.B. 1966, Boston University		B.S. 1966, St. Mary's College, Ind.	N.J.
Altfas, Jules R.	Ariz.	Clark, Leo Joseph P.	D.C.
A.B. 1966, Arizona State University		B.S. 1966, University of Notre Dame	
Anderson, Robert	Mich.	Crittenden, Maureen E.	N.Y.
B.S. 1966, Michigan State University		B.S. 1966, Marquette University	
Andrus, Joseph M.	Ky.	Davis, Gerald F.	Japan
B.S. 1965, Stanford University		B.S. 1966, University of Missouri	
Ascarelli, David E.	N.Y.	De Figuerado, Paul D.	Wash.
B.S. 1966, State University of New York at Albany		B.S. 1966, Stanford University	
Bageant, Thomas E.	D.C.	Delameter, James W.	Calif.
A.B. 1966, Western Maryland College		A.B. 1966, University of Washington	
Balacki, John A.	N.Y.	Edwards, George G., Jr.	Fla.
B.S. 1966, Canisius College		A.B. 1966, San Jose State College	
Barefoot, Sherwood W., Jr.	N.C.	Emmett, John R.	Md.
A.B. 1963, Duke University		B.S. 1965, Georgia Institute of Technology	
Benkovic, Gregory W.	Conn.	Fine, Robert M.	N.Y.
A.B. 1966, Johns Hopkins University		A.B. 1967, The George Washington University	
Bonar, Robert W.	Idaho	Ford, Gerald P.	N.J.
B.S. 1966, College of Idaho		A.B. 1965, Brigham Young University	
Burton, Ronald C.	Utah	Freis, Peter C., Jr.	N.Y.
B.S. 1965, University of Utah		B.S. 1966, St. Peter's College, N.J.	
Canon, Dennis L.	N.M.	Gardstein, Henry F., Jr.	N.J.
B.S. 1966, University of Arizona		A.B. 1966, Franklin and Marshall College	
Ceavatta, Andrew A., Jr.	Pa.	Gerety, Robert J.	
A.B. 1966, Franklin and Marshall College		A.B. 1962, Rutgers, the State University	N.J.
Cerimele, Nicholas A.	Ohio	A.M. 1966, Ph.D. 1967, Stanford University	
B.S. 1965, University of Pittsburgh		Gerkin, Peter R.	
		Attended Temple University	



Goldberg, Jay S. A.B. 1966, State University of New York at Binghamton	N.Y.	Mitchell, Paul R. A.B. 1966, University of Massachusetts	Mass.
Goranson, Eric E. B.S. 1966, Washington State University	Wash.	Moeser, Thomas E. A.B. 1967, The George Washington University	Md.
Guyton, Kathryn K. B.S. 1966, Juniata College	N.J.	Muth, Warren F. A.B. 1964, Gettysburg College	N.Y.
Hartz, Charles R. A.B. 1966, Concordia College, Moorhead, Minn.	Mont.	Odere, Fred G. B.S. 1966, Carnegie Institute of Technology	N.Y.
Heinze, Robert G. B.S. 1965, The George Washington University	Md.	Oram, Alan J. B.S. 1966, Mount St. Mary's College, Md.	Pa.
Herndon, S. Paul IV B.S. 1966, Georgetown University	Ga.	Osborne, Robert C. A.B. 1966, University of California, Los Angeles	Calif.
Higgins, Thomas E. B.S. 1966, Fordham University	N.J.	Palmer, Robert C. B.S. 1966, University of New Mexico	N.M.
Hill, Malcolm D. B.S. 1965, Stanford University	Calif.	Pan, John C. B.S. 1966, University of Notre Dame	Hong Kong
Hines, Edward L. D.D.S. 1967, Columbia University	Conn.	Paul, Philip A.B. 1964, Brandeis University	N.Y.
Hirsch, Jack H. A.B. 1966, Washington and Jefferson College	Pa.	Pugsley, George C. B.S. 1966, University of Utah	Utah
Hoar, Barbara R. A.B. 1966, University of Pennsylvania	Pa.	Redd, Burton L. Attended Brigham Young University	Texas
Hoefs, John C. A.B. 1966, California Lutheran College	Calif.	Rogers, John S. II B.S. 1966, University of Maryland	Md.
Huseby, Jon S. A.B. 1966, Brown University	N.J.	Rytting, Richard M. B.S. 1966, University of Utah	Utah
Husted, Roger C. B.S. 1966, Brigham Young University	Calif.	Santangelo, Salvatore C. A.B. 1965, Catholic University of America	Conn.
Jeppson, Taylor A. A.B. 1966, University of Utah	Utah	Sappington, Joseph B. B.S. 1965, Georgetown University	Md.
Jetton, Norman B. A.B. 1967, The George Washington University	Md.	Schnur, Anita K. A.B. 1965, Rutgers, the State University	N.J.
Johnson, Loren A. B.S. 1966, University of Washington	Wash.	Sciallis, Gabriel F. A.B. 1966, Rutgers, the State University	N.J.
Jones, Michael R. A.B. 1966, Franklin and Marshall College	N.J.	Scott, Samuel J., Jr. B.S. 1966, The George Washington University	Va.
Kanda, Louis T. A.B. 1966, University of California, Los Angeles	Congo	Segall, Marc R. Attended Franklin and Marshall College	N.J.
Katona, John J. B.S. 1965, Pennsylvania State University	N.Y.	Singer, Robert J. B.S. 1966, Pennsylvania State University	N.J.
Kent, Wilburn L., Jr. A.B. 1966, Johns Hopkins University	Miss.	Smith, Charles I. B.S. 1966, Syracuse University	N.Y.
Kovick, Rodney B. B.S. 1966, University of Washington	Mont.	Sommer, Michael S. A.B. 1959, A.M. 1964, The George Washington University	Md.
Lamb, Ronald B. B.S. 1966, University of Redlands	Calif.	Strunk, Harold P. A.B. 1966, Yale University	Pa.
Law, Charles E., Jr. B.S. 1966, The George Washington University	Va.	Suetsugu, Ralph T. A.B. 1966, Johns Hopkins University	Hawaii
Lewis, Paul E. II A.B. 1966, Johns Hopkins University	Md.	Sullivan, Patrick J. Attended Catholic University of America	Fla.
Lewis, Richard A. A.B. 1966, Queens College, N.Y.	N.Y.	Sussman, Michael E. A.B. 1966, Franklin and Marshall College	N.J.
Long, Jon E. B.S. 1965, University of Arizona	Ariz.	Taylor, Richard L., Jr. Attended Northwestern University	Ohio
Lyles, John W., Jr. B.M.E. 1954, Cornell University	Md.	Thomas, Paul J. B.S. 1966, University of Maryland	Md.
Lynch, William S. B.S. 1966, University of Notre Dame	Ohio	Wagshal, Eric M. A.B. 1967, The George Washington University	D.C.
MacLaughlin, Winthrop S., Jr. B.S. in Phar. 1966, Fordham University	Conn.	Ward, Richard L. B.S. 1966, Brigham Young University	Idaho
Marshall, Warren C. II B.S. 1966, Pennsylvania State University	N.J.	Washburn, Michael D. Attended University of Utah	Utah
Menchey, Milton J. A.B. 1966, San Diego State College	Calif.	Wasilauskas, Victor P., Jr. B.S. 1966, Mount St. Mary's College, Md.	Conn.
Mewha, Malcolm K. A.B. 1966, University of Pennsylvania	Pa.	Weinstein, Melvin P. A.B. 1966, Rutgers, the State University	N.J.
Miller, Paul D. A.B. 1965, Gettysburg College	Md.	Welch, Joseph D. A.B. 1966, Johns Hopkins University	N.Y.
M.S. 1966, The George Washington University			



Whalen, Richard M.	Mont.	Woodard, Craig D.	N.Y.
B.S. 1966, Montana State University		A.B. 1966, Johns Hopkins University	Va.
Wojcik, John D.	N.J.	Wooten, Michael B.	
B.S. 1966, Georgetown University		Attended Washington State University	

## THIRD YEAR

Anderson, John D.	Texas	Giovan, Peter N.	Calif.
Attended Yale University		A.B. 1965, Occidental College	Calif.
Arni, Nancy D.	Va.	Goldhamer, Robert D.	Calif.
A.B. 1964, Sweet Briar College		B.S. 1965, The George Washington University	Calif.
Ashkin, Jeffrey R.	N.Y.	Goldstein, Michael G.	
A.B. 1965, Clark University		Attended University of California,	
Atkins, Mark J.	N.J.	Los Angeles	Pa.
Attended University of Rochester		Greenberg, Michael R.	Pa.
Berger, Michael	N.Y.	Attended Pennsylvania State University	
B.S. 1965, Tufts University		Grossman, Jay R.	N.J.
Berrie, Warren R.	Calif.	A.B. 1965, Temple University	
A.B. 1964, Stanford University		Grossman, Leonard J.	
Blades, Frederick C.	N.J.	A.B. 1965, Vanderbilt University	Calif.
A.B. 1965, University of Maine		Heldman, Patricia F.	Minn.
Bland, Susan M.	Md.	A.B. 1965, University of California, Berkeley	
B.S. 1965, The George Washington University		Hitchcock, Michael H.	Md.
Blum, Matthew D.	Pa.	A.B. 1961, University of Minnesota	
A.B. 1964, LaSalle College		Holober, Brian C.	N.Y.
Bodley, Don H.	Mont.	A.B. 1966, The George Washington University	
B.S. 1965, Montana State College		Horowitz, Michael S.	Calif.
Boruch, Frank J.	N.J.	A.B. 1965, Colgate University	
B.S. 1965, St. Peter's College, N.J.		Horsley, Heide B.	Md.
Boyd, James G., Jr.	Mass.	B.S. 1962, University of California, Berkeley	D.C.
A.B. 1964, Boston University		Jackson, Allen W.	Utah
Brand, David I.	N.Y.	B.S. 1965, The George Washington University	N.Y.
Attended Brooklyn College		Jacoby, Richard M.	Calif.
Brown, Brooks G.	D.C.	B.E.E. 1964, University of Virginia	
A.B. 1965, Washington and Lee University		Jenkins, Edward G.	N.Y.
Brown, Richard B.	N.Y.	B.S. 1963, University of Utah	
B.S. 1965, Tufts University		Kahn, Robert W.	Calif.
Cannon, Richard B.	Utah	A.B. 1965, Kenyon College	Ohio
A.B. 1965, University of Utah		Koch, Edward	
Chorches, Michael A.	Conn.	A.B. 1964, University of California, Berkeley	N.Y.
A.B. 1965, Boston University		Kodish, Martin E.	Ariz.
Cohen, Martin I.	N.Y.	Attended University of Akron	Colo.
A.M. 1965, Adelphi University		Koff, Irwin H.	Minn.
Conso, Paul J., Jr.	W.Va.	A.B. 1965, Hofstra University	Conn.
A.B. 1966, The George Washington University		Kriegsfeld, Barry A.	
Cummings, Kenneth C., Jr.	Calif.	A.B. 1965, University of Pennsylvania	
B.S. 1965, The George Washington University		Langstaff, Gary K.	N.Y.
D'Amato, Paul H.	Md.	A.B. 1962, University of Colorado	
A.B. 1965, Rutgers, the State University		Larson, David E.	
Dove, Richard N.	Md.	A.B. 1964, Dartmouth College	
A.B. 1965, Columbia University		Levine, Peter H.	
Duffey, Depue H.	D.C.	B.S. 1963, Massachusetts Institute of Technology	N.Y.
B.S. 1965, American University		Levinson, Lawrence M.	N.Y.
Eberdt, Arthur J.	Va.	A.B. 1965, Cornell University	
A.B. 1959, Duke University		Lieberman, Robert A.	Mass.
Eudaily, Daniel H.	Mont.	B.S. 1965, City College, New York	D.C.
B.S. 1966, Montana State University		Lloyd, Frederick A., Jr.	Pa.
Fabrega, Jose M.	Panama	A.B. 1965, University of Massachusetts	
Attended University of Notre Dame		Margolis, Richard S.	Md.
Foley, Bethanne	D.C.	B.S. 1965, Pennsylvania State University	Va.
A.B. 1963, Chestnut Hill College		McNamara, Thomas C.	Calif.
Forman, Kenneth J.	Pa.	A.B. 1965, University of Virginia	
A.B. 1964, University of Pennsylvania		Millman, Robert	
Franklin, Gary M.	Md.	A.B. 1966, The George Washington University	
A.B. 1961, Franklin and Marshall College		Mitchell, John W., Jr.	
Friedman, Leonard M.	Ala.	A.B. 1965, Duke University	
A.B. 1965, University of Pennsylvania		Murray, Robert W.	
Frist, Stephen	N.Y.	A.B. 1965, Stanford University	
Attended New York University			



Noonan, David V.	Va.	Speck, Eugene L.	Mass.
A.B. 1966, The George Washington University		A.B. 1958, University of Massachusetts	
Oliphant, Beverly A.	Miss.	Ph.D. 1966, The George Washington University	
B.S. 1960, Mississippi State University		Spiegler, Paul S.	D.C.
M.S. 1964, University of Florida		A.B. 1960, New York University	
Orleans, Ronald J.	Md.	Stern, Eric	N.Y.
A.B. 1965, Franklin and Marshall College		A.B. 1965, Brooklyn College	
Pace, Robert C.	Utah	Storper, Henry M.	N.Y.
A.B. 1965, University of Utah		A.B. 1965, New York University	
Patterson, Robert H.	Va.	Struach, Joseph M.	N.Y.
A.B. 1965, Bridgewater College		A.B. 1965, Yeshiva University	
Reich, Thomas S.	Calif.	Swenson, Swen R.	Utah
Attended Whitman College		A.B. 1963, Brigham Young University	
Roberts, Robert M.	N.J.	Terry, Luke E., Jr.	W.Va.
A.B. 1965, Lafayette College		B.S. 1965, College of William and Mary	
Robins, Douglas N.	D.C.	Thompson, David A.	Pa.
B.S. 1965, Washington and Lee University		B.S. 1965, Elizabethtown College	
Rodriguez, Vieraemilio J.	Puerto Rico	Tietjen, George W.	N.Y.
A.B. 1965, Boston University		A.B. 1965, Rutgers, the State University	
Rubenstein, David M.	Conn.	Tortolani, Anthony J.	N.Y.
A.B. 1964, University of Minnesota		B.S. 1965, Fordham University	
Sack, Peter G.	N.J.	Tuegel, Charles R.	Va.
A.B. 1965, Columbia University		Attended The George Washington University	
Sanders, Marc R.	Oreg.	Weiner, Neil J.	N.Y.
B.S. 1964, University of Oregon		A.B. 1965, University of Pennsylvania	
Sawacki, John E.	Conn.	West, Edmund A.	N.Y.
B.S. 1965, Trinity College, Conn.		A.B. 1965, New York University	
Seelfo, Ronald J.	N.J.	Wolf, Ralph R.	N.Y.
B.S. 1965, Tufts University		A.B. 1965, Yale University	
Schulman, Robert H.	N.Y.	Wollack, C. Harold	Pa.
A.B. 1965, Yeshiva University		A.B. 1959, Temple University	
Schwartz, Frederic T.	N.Y.	Ph.D. 1963, Princeton University	
A.B. 1965, American International College		Wong, Ira G.	Oreg.
Schwartz, William J.	N.Y.	A.B. 1963, University of Oregon	
A.B. 1965, Yeshiva University			
Sinderson, Thomas G.	D.C.		
A.B. 1965, Emory University			

## FOURTH YEAR

Anderson, Rodney U., Jr.	Utah	Church, Arthur A.	Mass.
B.S. 1964, University of Utah		A.B. 1964, Boston University	
Anish, Stephen A.	N.J.	Cifelli, Nicholas M., Jr.	N.J.
A.B. 1964, Rutgers, the State University		A.B. 1964, Rutgers, the State University	
Antus, John L.	N.Y.	Clum, Katharine M.	Md.
B.S. 1964, University of Notre Dame		B.S. 1964, The George Washington University	
Barber, Letha	Ohio	Collins, Richard F., Jr.	Pa.
B.S. 1961, Purdue University		A.B. 1964, Duke University	
Beattie, Martin C.	Wash.	Davis, David D.	Conn.
B.S. 1964, Washington State University		A.B. 1964, Providence College	
Bernstein, Donald P.	N.J.	Dayton, Lynn T.	Wyo.
Attended Franklin and Marshall College		B.S. 1966, Brigham Young University	
Bernstein, LeRoy	Colo.	DeWitt, Paul L.	Mont.
A.B. 1959, University of Colorado		Attended Eastern Montana College of Education	
Bier, Charles J.	D.C.	Dickler, Howard B.	Ill.
A.B. 1965, The George Washington University		A.B. 1964, Johns Hopkins University	
Bicfield, Charles J.	N.Y.	Dunston, John H.	Pa.
A.B. 1964, Lafayette College		A.B. 1963, Lycoming College	
Brown, DeWitt C.	N.Y.	Egan, Michael C.	Pa.
A.B. 1964, Johns Hopkins University		B.S. 1964, University of Scranton	
Attended University of Utah	Utah	Ehlers, Edward M.	Conn.
Caggiano, Gian Battista A.	D.C.	A.B. 1964, University of Connecticut	
A.B. 1964, Catholic University of America		Feldman, Mark A.	N.Y.
Carroll, Denis M.	Calif.	B.S. 1964, City University of New York	
A.B. 1964, Stanford University		Feldman, Marvin J.	D.C.
Cerciello, Robert L.	N.J.	A.B. 1965, The George Washington University	
B.S. 1964, St. Peter's College, N.J.		Fischer, David C.	N.D.
Chew, John Y.	Calif.	B.S. 1966, University of North Dakota	
A.B. 1964, University of California, Berkeley			



- |   |        |   |        |
|---|--------|---|--------|
| Fisher, Kenneth A.                                | Mass.  | Murdock, Myron I.                                     | N.J.   |
| B.S. 1962, Tufts University                       |        | A.B. 1964, Boston University                          | Md.    |
| Fitzgerald, Joseph B.                             | Pa.    | Nelsen, Margaret A.                                   | Pa.    |
| B.S. 1964, University of Scranton                 |        | A.B. 1965, The George Washington University           | D.C.   |
| Fontaine, Leah L.                                 | Texas  | Nicolette, Anthony J., Jr.                            | Calif. |
| A.B. 1964, Valparaiso University                  |        | A.B. 1963, Washington and Jefferson College           | Pa.    |
| Francis, Jack D.                                  | Md.    | Notes, Richard D.                                     | Calif. |
| A.B. 1965, The George Washington University       |        | A.B. 1964, University of Pennsylvania                 | Pa.    |
| Frye, Stephen H.                                  | Mass.  | Ober, Richard R.                                      | Pa.    |
| A.B. 1963, Boston University                      |        | A.B. 1963, Occidental College                         | Pa.    |
| Gavaris, Paul T.                                  | N.J.   | Oller, Dale W.  | Ohio   |
| B.S. in Phar. 1961, Rutgers, the State University |        | A.B. 1964, Franklin and Marshall College              | N.Y.   |
| Godwin, Earl R.                                   | Calif. | Olmstead, Phillip M.                                  | N.Y.   |
| A.B. 1964, University of California, Berkeley     |        | A.B. 1964, Western Reserve University                 | Wis.   |
| Goldberg, Gerald S.                               | Pa.    | Pacella, Karen J.                                     | Calif. |
| B.S. 1964, University of Pittsburgh               |        | A.B. 1964, Manhattanville College of the Sacred Heart | Fla.   |
| Gorbaty, Lionel L.                                | N.Y.   | Park, John R.   | D.C.   |
| A.B. 1964, Brooklyn College                       |        | B.S. 1964, Marquette University                       | Pa.    |
| Hart, Philip L.                                   | Pa.    | Parsons, Gibbe H.                                     | Pa.    |
| Attended University of Pittsburgh                 |        | A.B. 1964, Stanford University                        | Pa.    |
| Irani, Sands K.                                   | Md.    | Peiken, Alan S.                                       | D.C.   |
| A.B. 1963, University of the South                |        | B.S. 1964, University of Chicago                      | Pa.    |
| Jansen, John V.                                   | Calif. | Reeves, John R.                                       | Pa.    |
| A.B. 1964, University of California, Berkeley     |        | A.B. 1965, The George Washington University           | Md.    |
| Jungblut, Kenneth R.                              | N.J.   | Roberts, Morton J.                                    | Pa.    |
| A.B. 1963, Rutgers, the State University          |        | A.B. 1964, Franklin and Marshall College              | N.Y.   |
| Kennelly, Joseph P.                               | Wyo.   | Rothschild, Carl J.                                   | Pa.    |
| B.S. 1964, Brigham Young University               |        | A.B. 1965, The George Washington University           | N.Y.   |
| Kenny, John D.                                    | Va.    | Rowsey, John J.                                       | Pa.    |
| B.S. 1964, University of Virginia                 |        | A.B. 1965, The George Washington University           | Mass.  |
| King, Byron F., Jr.                               | Pa.    | Rubin, Lewis  | W.Va.  |
| A.B. 1964, West Virginia University               |        | B.S. 1964, City University of New York                | N.J.   |
| Kohl, Roy D., Jr.                                 | Calif. | Russolillo, Gary E.                                   | Pa.    |
| A.B. 1964, Occidental College                     |        | A.B. 1964, University of Pennsylvania                 | Pa.    |
| Kuhn, Charles M.                                  | Pa.    | Sample, George A.                                     | Pa.    |
| Attended University of Pittsburgh                 |        | A.B. 1964, West Virginia University                   | Pa.    |
| Kulund, Daniel N.                                 | N.Y.   | Schneiderman, Charles I.                              | Pa.    |
| A.B. 1962, Hofstra University                     |        | A.B. 1964, University of Michigan                     | Pa.    |
| Lawsky, Alan R.                                   | N.Y.   | Sealy, Joan R.  | Pa.    |
| B.S. 1964, City University of New York            |        | A.B. 1964, University of Chicago                      | Pa.    |
| LeNard, Peter D.                                  | D.C.   | Secrist, Lee J.                                       | Pa.    |
| B.S. 1964, The George Washington University       |        | A.B. 1964, Stanford University                        | Pa.    |
| Levenbrown, Jack                                  | N.Y.   | Simington, Arthur W.                                  | Pa.    |
| A.B. 1964, Yeshiva University                     |        | A.B. 1964, Dartmouth College                          | Pa.    |
| Levin, Gary M.                                    | Conn.  | Sloan, Earle R.                                       | Pa.    |
| A.B. 1964, University of Connecticut              |        | A.B. 1964, Stanford University                        | Pa.    |
| Levine, Robert T.                                 | N.J.   | Smith, James W.                                       | Pa.    |
| A.B. 1965, The George Washington University       |        | B.S. 1964, College of Idaho                           | Pa.    |
| Lohaus, Allan W.                                  | N.J.   | Sober, Arthur J.                                      | Pa.    |
| A.B. 1965, Earlham College                        |        | Attended The George Washington University             | Pa.    |
| Lourie, Ira S.                                    | Md.    | Spano, Kenneth A.                                     | Pa.    |
| A.B. 1964, The George Washington University       |        | B.S. 1964, St. John's University, N.Y.                | Pa.    |
| Loxley, Sidney S.                                 | Ohio   | Spar, Ira L.  | Pa.    |
| A.B. 1965, The George Washington University       |        | A.B. 1964, City University of New York                | Pa.    |
| Lumb, Raymond C.                                  | Md.    | Spencer, Edward C.                                    | Pa.    |
| B.S. 1964, University of Maryland                 |        | B.S. 1964, University of Utah                         | Pa.    |
| MacDonald, Gordon R.                              | Md.    | Stoneburner, Larry L.                                 | Pa.    |
| Attended Franklin and Marshall College            |        | A.B. 1962, Ohio State University                      | Pa.    |
| Marcus, Daniel                                    | N.Y.   | Taylor, Edward J.                                     | Pa.    |
| A.B. 1964, Washington University                  |        | B.S. in Phar. 1963, University of Connecticut         | Pa.    |
| Matsutani, Osamu H.                               | Calif. | Turetsky, Martin J.                                   | Pa.    |
| A.B. 1963, University of California, Berkeley     |        | A.B. 1964, Cornell University                         | Pa.    |
| Melchionda, Anthony M.                            | Conn.  | Van Nieuwenhuize, Albert H.                           | Pa.    |
| B.S. 1964, King's College, Pa.                    |        | A.B. 1964, Brown University                           | Pa.    |
| Meyers, Barbara M.                                | D.C.   | Vitums, Vitolds C.                                    | Pa.    |
| A.B. 1961, Bryn Mawr College                      |        | B.S. 1959, Washington State University                | Pa.    |
| Miller, Bruce A.                                  | N.Y.   | D.D.S. 1962, University of Washington                 | Pa.    |
| A.B. 1964, Lafayette College                      |        | Walden, David A.                                      | Pa.    |
| Miller, Michael H.                                | N.Y.   | B.S. 1964, University of Utah                         | Pa.    |
| B.S. 1964, Bates College                          |        | Watters, Edmond C.                                    | Pa.    |
|   |        | B.S. 1964, College of William and Mary                | Pa.    |



Williams, David B.	Mass.	Zeterberg, Joseph M.	N.Y.
B.S. 1964, University of Massachusetts		B.S. 1964, Mount St. Mary's College, Md.	
Young, Stephen B.	N.Y.	Ziegler, James H.	N.J.
A.B. 1964, Columbia University		A.B. 1963, Johns Hopkins University	
Zeaske, Richard L.	Iowa		
A.B. 1963, Johns Hopkins University			

### Summaries of Registration 1967-68

#### NUMBER OF REGISTRANTS

Class entering 1967	109	Class entering 1965	95
Class entering 1966	101	Class entering 1964	104

#### GEOGRAPHICAL DISTRIBUTION OF STUDENTS

Alabama	1	New York	78
Arizona	6	North Carolina	1
California	32	North Dakota	1
Colorado	2	Ohio	11
Connecticut	18	Oregon	2
Delaware	1	Pennsylvania	31
District of Columbia	24	Rhode Island	1
Florida	3	Tennessee	1
Georgia	1	Texas	3
Hawaii	2	Utah	14
Idaho	4	Virginia	18
Illinois	1	Washington	7
Iowa	1	West Virginia	3
Kentucky	1	Wisconsin	1
Maine	1	Wyoming	2
Maryland	42	Puerto Rico	1
Massachusetts	15	Virgin Islands	1
Michigan	1	Congo	1
Minnesota	2	El Salvador	1
Mississippi	2	Hong Kong	1
Montana	6	Jamaica	1
Nebraska	1	Japan	1
Nevada	1	Nigeria	1
New Jersey	48	Panama	2
New Mexico	2	Thailand	1

#### INSTITUTIONS IN WHICH SCHOOL OF MEDICINE STUDENTS EARNED DEGREES

Adelphi University	1	Brandeis University	1
American International College	1	Bridgewater College	1
American University	1	Brigham Young University	9
Arizona State University	1	Brooklyn College	3
Arizona, University of	2	Brown University	4
Bates College	1	Bryn Mawr College	2
Boston University	8	C. W. Post College	1
Bowdoin College	1	California Lutheran College	1



California, University of, Berkeley	9	Montana State College	1
California, University of, Los Angeles	2	Montana State University	2
Canisius College	1	Mount St. Mary's College, Md.	5
Carnegie Institute of Technology	1	Mount Union College	1
Case Institute of Technology	1	Muhlenberg College	2
Catholic University of America	2	New Mexico, University of	1
Chestnut Hill College	1	New York, City College	2
Chicago, University of	2	New York, City University of	4
Clark University	1	New York, State University of, at Albany	1
Colgate University	2	New York, State University of, at Binghamton	1
Colorado, University of	2	New York University	8
Columbia University	6	Niagara University	1
Concordia College, Moorhead, Minn.	1	North Dakota, University of	1
Connecticut, University of	4	Northwestern University	3
Cornell University	6	Notre Dame, University of	4
Dartmouth College	2	Occidental College	3
Duke University	7	Ohio State University	1
Earlham College	1	Oregon, University of	2
Eastern Mennonite College	1	Parsons College	1
Elizabethtown College	1	Pennsylvania State University	4
Emory University	1	Pennsylvania, University of	9
Fairfield University	1	Pittsburgh, University of	2
Florida, University of	1	Princeton University	1
Fordham University	4	Providence College	1
Franklin and Marshall College	10	Purdue University	1
George Washington University	34	Queens College, N.Y.	1
Georgetown University	4	Redlands, University of	1
Georgia Institute of Technology	1	Richmond, University of	1
Gettysburg College	5	Rochester, University of	11
Harvard University	1	Rutgers, the State University	1
Hawaii, University of	1	St. John's University, N.Y.	1
Hofstra University	2	St. Mary's College, Ind.	5
Idaho, College of	2	St. Peter's College, N.J.	1
Johns Hopkins University	12	San Diego State College	1
Juniata College	1	San Fernando Valley State College	1
Kenyon College	1	San Jose State College	2
King's College, Pa.	1	Scranton, University of	1
Lafayette College	4	Seton Hall University	1
LaSalle College	2	South, University of the	11
Lycoming College	1	Stanford University	1
Maine, University of	3	Sweet Briar College	1
Manhattanville College of the Sacred Heart	1	Syracuse University	2
Marquette University	2	Temple University	1
Maryland, University of	6	Texas, University of	4
Massachusetts Institute of Technology	1	Trinity College, Conn.	7
Massachusetts, University of	5	Tufts University	1
Miami University	1	Tulane University of Louisiana	1
Michigan State University	1	Utah State University of Agriculture and Applied Science	11
Michigan, University of	2	Utah, University of	1
Minnesota, University of	2	Valparaiso University	1
Mississippi State University	1	Vanderbilt University	5
Missouri, University of	1	Virginia, University of	1
		Wagner College	1



Washington and Jefferson College ..	2	Western Maryland College .....	2
Washington and Lee University ....	2	Western Reserve University .....	2
Washington State University .....	3	Wheaton College, Ill. ....	1
Washington University .....	1	Whitman College .....	1
Washington, University of .....	6	William and Mary, College of .....	2
Wesleyan University .....	2	Yale University .....	3
West Virginia University .....	2	Yeshiva University .....	5

Number of College Graduates ..... 368      Number of Colleges Represented.. 135

## ANNUAL ISSUES OF THE UNIVERSITY BULLETIN

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STUDENT FINANCIAL AID, Office of Student Financial Aid

NATIONAL LAW CENTER, Dean of the Center

SCHOOL OF ENGINEERING AND APPLIED SCIENCE, Dean of the School

UNDERGRADUATE AND GRADUATE CATALOGUE (Arts and Sciences, Education, Government and Business Administration, Public and International Affairs), Office of Admissions

SCHOOL OF MEDICINE, Admissions Office, School of Medicine

SUMMER SESSIONS, Dean of the Summer Sessions

SCHEDULE OF CLASSES: FALL AND SPRING SEMESTERS, Registrar

SCHEDULE OF CLASSES: SUMMER SESSIONS, Dean of the Summer Sessions



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## COLLEGES AND SCHOOLS—DEGREE PROGRAMS

COLUMBIAN COLLEGE OF ARTS AND SCIENCES: Associate in Arts (A.A.), Bachelor of Arts (A.B.), Bachelor of Science (B.S.), Bachelor of Science in General Studies (B.S. in Gen.Std.), Bachelor of Science in Geodetic and Cartographic Science (B.S. in Geod. and Cart.Sc.), and Bachelor of Science in Medical Technology (B.S. in Med.Tech.)

GRADUATE SCHOOL OF ARTS AND SCIENCES: Master of Arts (A.M.), Master of Fine Arts (M.F.A.), Master of Music (Mus.M.), Master of Science (M.S.), and Doctor of Philosophy (Ph.D.)

SCHOOL OF MEDICINE: Doctor of Medicine (M.D.)

NATIONAL LAW CENTER: Bachelor of Laws (LL.B.), Master of Laws (LL.M.), Master of Comparative Law (M.Comp.L.), Master of Comparative Law (American Practice) (M.Comp.L.(Am.Prac.)), and Doctor of Juridical Science (S.J.D.)

SCHOOL OF ENGINEERING AND APPLIED SCIENCE: Bachelor of Science (Civil Engineering) (B.S. (C.E.)), Bachelor of Science (Electrical Engineering) (B.S. (E.E.)), Bachelor of Science (Measurement Science) (B.S. (Meas.S.)), Bachelor of Science (Mechanical Engineering) (B.S. (M.E.)), Master of Science (M.S.), Master of Engineering Administration (M.E.A.), and Doctor of Science (D.Sc.)

SCHOOL OF EDUCATION: Bachelor of Arts in Education (A.B. in Ed.), Bachelor of Science in Physical Education (B.S. in P.E.), Master of Arts in Teaching (A.M. in T.), Master of Arts in Education (A.M. in Ed.), Education Specialist (Ed.S.), and Doctor of Education (Ed.D.)

SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION: Bachelor of Business Administration (B.B.A.), Bachelor of Science in General Studies (B.S. in Gen.Std.), Master of Arts in Government (A.M. in Govt.), Master of Business Administration (M.B.A.), Master of Public Administration (M.P.A.), Master of Science in Administration (M.S. in Adm.), Master of Science in Business Administration (M.S. in B.A.), Master of Science in Financial Management (M.S. in Fin.Mgt.), Master of Science in Governmental Administration (M.S. in Govt.Adm.), Master of Science in Personnel Administration (M.S. in Per.Adm.), Master of Science in Public Administration (M.S. in P.A.), Master of Urban and Regional Planning (M. of Urb. and Reg.Plan.), Graduate Certificate in Health Care Administration (Grad.Cert. in H.C.A.), Doctor of Business Administration (D.B.A.), and Doctor of Public Administration (D.P.A.)

SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS: Bachelor of Arts (A.B.), Certificate of the Institute for Sino-Soviet Studies (Cert. of I.S.S.S.), Master of Arts (A.M.), and Master of Science in International Affairs (M.S. in I.A.)



## THE GEORGE WASHINGTON UNIVERSITY

COLUMBIAN COLLEGE OF ARTS AND SCIENCES, 1821

THE GRADUATE SCHOOL OF ARTS AND SCIENCES, 1893

THE SCHOOL OF MEDICINE, 1825

THE NATIONAL LAW CENTER, 1865

THE SCHOOL OF ENGINEERING AND APPLIED SCIENCE, 1884

THE SCHOOL OF EDUCATION, 1907

THE SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION, 1928

THE SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS, 1928

THE COLLEGE OF GENERAL STUDIES, 1950

THE DIVISION OF UNIVERSITY STUDENTS, 1930

THE SUMMER SESSIONS, 1916

THE UNIVERSITY HOSPITAL, 1898



THE GEORGE WASHINGTON UNIVERSITY BULLETIN



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CENTER



1967-1968



Detailed information may be obtained by addressing inquiries as indicated below. For any information not included here, please write to the Office of Admissions. Mailing address for all University offices unless otherwise indicated is The George Washington University, Washington, D. C. 20006.

Information concerning courses of instruction, programs, and faculties of the several colleges and schools will be found in separate issues of the University Bulletin, which are listed on page 112. Zip code is essential for mailing catalogues.

Law Admission.....	Dean of The National Law Center
Alumni Association.....	Alumni Office
Financial Aid (Law students).....	Dean of The National Law Center
Foreign Students.....	Adviser to International Students
Gifts and Bequests.....	Resources Programs

In Arts and Sciences.....Dean of The Graduate School of Arts and Sciences  
In Education.....Dean of The School of Education  
In Engineering and Applied Science.....Dean of The School of Engineering and Applied Science

In Law.....Dean of The National Law Center  
In Accounting, Business Administration, Business and Economic Statistics, Health Care Administration, International Business, Personnel Administration, Public Administration, Urban and Regional Planning  
Dean of The School of Government and Business Administration  
In International Affairs and Public Affairs.....Dean of  
The School of Public and International Affairs

Men.....	Dean of Men
Women.....	Dean of Women
Off-Campus and Noncredit Courses.....	Dean of The College of General Studies
Student Employment.....	Student Placement Office
Summer Sessions.....	Dean of the Summer Sessions
Transcripts of Records.....	Registrar
Veterans Education.....	Director of Veterans Education

*Volume LXVI, Number 10, April 1967*

MONTHLY: SEPTEMBER, OCTOBER, FEBRUARY

(2 ISSUES IN JULY, DECEMBER, MARCH, AND APRIL)

*Second Class Postage Paid at Washington, D. C.*



THE GEORGE WASHINGTON UNIVERSITY BULLETIN

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WASHINGTON, D.C. 20006



# THE GEORGE WASHINGTON UNIVERSITY BULLETIN CORRESPONDENCE DIRECTORY



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 Transcripts of Records.....  
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Student Placement Office.....  
 Dean of the Summer Session.....  
 Registrar.....  
 Director of Veterans Education.....

THE GEORGE WASHINGTON UNIVERSITY BULLETIN

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# THE CALENDAR FOR 1967-68

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1967

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## THE CALENDAR FOR 1967-68

### 1967 SUMMER TERM

- June 5 Registration for all sessions (11 am-7 pm) *Monday*  
 June 6 First- and 13-week sessions begin *Tuesday*  
 July 4 Independence Day (holiday) *Tuesday*  
 July 14 First-session classes end *Friday*  
 \*July 17-19 First-session examination period *Monday-Wednesday*  
 July 20 Registration for students attending 2d session only (11 am-6 pm) *Thursday*  
 July 21 Second-session begins *Friday*  
 August 30 Last day of classes *Wednesday*  
 August 31-Sept. 2 Second- and 13-week sessions examination period *Thursday-Saturday*

### 1967 FALL SEMESTER

- †September 12-13 Registration: *Tuesday and Wednesday*  
 Application for February graduation due as part of registration  
 September 14 Classes begin *Thursday*  
 September 29 S.J.D. dissertations of February candidates due *Friday*  
 November 10 Veterans Day (holiday) *Friday*  
 November 22 Thanksgiving recess begins after last class *Wednesday*  
 November 27 Classes resume *Monday*  
 December 16 Christmas recess begins after last class *Saturday*  
 January 3 Classes resume *Wednesday*  
 January 3 LL.M. theses of February candidates due *Wednesday*  
 January 10 Last day of fall-semester classes *Wednesday*  
 January 11-12 Reading period *Thursday-Friday*  
 January 15-24 Examination period *Monday-Wednesday*

### 1968 SPRING SEMESTER

- †January 25-27 Registration: *Thursday-Saturday*  
 Application for June graduation due as part of registration  
 January 29 Spring-semester classes begin *Monday*  
 February 2 S.J.D. dissertations of June candidates due *Friday*  
 February 22 Winter Convocation (holiday) *Thursday*  
 March 15 Application for 1968-69 teaching assistantships due *Friday*  
 April 6 Spring recess begins after last class *Saturday*  
 April 16 Classes resume *Tuesday*  
 May 1 Application for research assistantships due *Wednesday*  
 May 1 LL.M. theses of June candidates due *Wednesday*  
 May 13 Last day of spring-semester classes *Monday*  
 May 14-15 Reading period *Tuesday-Wednesday*  
 May 16-25 Examination period *Thursday-Saturday*  
 May 30 Memorial Day (holiday) *Thursday*  
 June 2 Baccalaureate Service *Sunday*  
 June 2 Commencement *Sunday*

### 1968 FALL SEMESTER

- September 17-18 Registration: *Tuesday-Wednesday*

\* Classes scheduled Wednesday evenings for the 13-week session will meet on Wednesday, July 19.  
 † Hours of registration will be announced in the *Schedule of Classes*, which will be available well in advance of each semester.







## THE NATIONAL LAW CENTER

### HISTORY

THE LAW SCHOOL, the oldest in the District of Columbia, was established in 1865 with a formal program of two years of study. This was largely through the efforts of the Reverend George Whitefield Samson, President of Columbian College, whose action resulted in the purchase of a separate building for holding law classes. This building had belonged to Trinity Church, of which Francis Scott Key had been Senior Warden. It was occupied by the Law School until 1884.

Sixty graduates, from twenty-two of the then thirty-seven states, received degrees in 1867. The School continued to have a student body and a faculty which reflected the fact that it was at the seat of our nation's government. Associate Justices David J. Brewer and John Marshall Harlan of the Supreme Court of the United States were among the prominent members of the bench and bar who served as lecturers.

In 1877, one year after the first such program was adopted in the United States, the Law School instituted a course leading to the degree of Master of Laws. In 1898 the course of instruction for the degree of Bachelor of Laws was extended to three years. The School took part in 1900 in the organization of the Association of American Law Schools. Later, women students were admitted, and in 1916 the first woman to take a regular course in law was graduated.

The School moved into its present quarters in 1925, marking the occasion with a dedicatory address by Roscoe Pound. The building, Stockton Hall, is named for Rear Admiral Charles H. Stockton, President of the University from 1910 to 1917.

In the past quarter-century the Law School developed its course and seminar offerings with consideration for the needs of first-degree and graduate students. The degree of Doctor of Juridical Science was instituted in 1940. The needs of foreign lawyers who come to this country and who require additional preparation for law work in the United States resulted in the creation of programs for the degrees of Master of Comparative Law in 1946 and Master of Comparative Law (American Practice) in 1951.

National University, which had had an important place in legal education in the District of Columbia since 1869, was merged in The George Washington University in August 1954.



Programs of special research and study, such as the independent Patent, Trademark, and Copyright Research Institute, give richness to the basic curriculum.

The National Law Center, which was established in 1959, seeks to establish and coordinate programs of teaching, research, and creative development in law which will assist the profession to meet the demands placed upon it by contemporary society. Emphasizing an interdisciplinary approach to modern social, political, scientific, and economic problems having legal implications, the Center also encourages close relations with other appropriate units of the University.

#### LOCATION IN THE NATION'S CAPITAL

Of special significance is the location of the National Law Center in the Nation's Capital, the focal point of the law in action, both American and international. The work of the Center goes on in this environment, presenting a unique opportunity for observation and study of federal agencies—judicial, legislative, and administrative. Readily accessible are the Supreme Court of the United States, the federal trial and appellate courts of the District of Columbia, and, in addition, federal courts of special jurisdiction, such as the United States Court of Claims, the United States Court of Customs and Patent Appeals, the Tax Court of the United States, and the Court of Military Appeals. Current federal legislation can be studied as it is considered by Congressional committees and as it comes up for debate on the floors of the House of Representatives and the Senate. With respect to the federal administrative agencies, students here in Washington have matchless opportunities for study and observation. They can attend informal and formal hearings of these agencies and can obtain from the docket sections complete records of administrative adjudication in specific cases. Illustrative of such federal agencies are the Interstate Commerce Commission and the Civil Aeronautics Board in the field of transportation; the Federal Trade Commission in the field of trade regulation; the Securities and Exchange Commission in the field of security issues and corporate finance; the National Labor Relations Board in the field of labor-management relations; the United States Patent Office in the field of patent law; the Federal Power Commission in the field of water, natural gas, and electric power; and the Federal Communications Commission in the field of radio and television.

Supplementing these environmental advantages of law in action are the exceptional research library collections in the Library of Congress, in the various departments of the Federal Government, and in the libraries of the headquarters of national and international organizations. The notable library of the Carnegie Foundation for International Peace has been acquired by The George Washington University for use of research students in international and comparative law, fields with respect to which Washington has come to be called "The Capital of the World."

The years of residence at law school are years of participation in the life of the community, which in the case of The George Washington University National Law Center is the government of the United States. As a consequence, the study of law takes on added meaning, whether the goal be government service or practice, general or specialized, and whatever the community in which the student plans to practice.



## OBJECTIVES

The primary purpose of the Center is to prepare men and women to meet the needs of society in the many fields of law, public and private. These needs call not only for technical skill but also for responsible leadership in the development of the law and the administration of justice. In fulfilling these responsibilities the Center conducts (1) a program of study in preparation for the practice of law, whether it be general practice, specialized practice, or government service; (2) the publication of a law journal containing the results of research in public law; (3) a series of student professional cocurricular activities; (4) study and research on an advanced level for foreign as well as for American students; and (5) a continuing legal education program for members of the bar.





## **Bachelor of Laws Program**

THE WIDE GEOGRAPHIC DISTRIBUTION of the students who come to the Nation's Capital to study law makes this a truly national law school. Students from almost every state in the Union here join students from several foreign countries in their legal training. Last year over 320 colleges and universities were represented. The basic curriculum leading to the Bachelor of Laws degree is addressed to the development and application of legal principles, skills, and ideals which are indispensable to the equipment of a lawyer for professional responsibility and leadership in modern society. It includes, first and foremost, the traditional core of legal education, namely, the study of legal materials—judicial, statutory, and administrative—and instruction in the understanding and technique of their use. It also includes the study of the nature and purpose of law, the history of the Anglo-American legal system, and the history and standards of the legal profession; practice in the skills of legal research and legal writing; elementary training in trial and appellate practice; and, through the medium of seminars, experience in group handling of legal problems.

### **ENTERING CLASSES**

The curriculum is organized so that students may begin the study of law for the Bachelor of Laws degree only at the start of the fall semester. Transfer students may enter at the start of the spring semester also.

### **ENTRANCE REQUIREMENTS**

Admission to candidacy for the degree of Bachelor of Laws requires a Bachelor of Arts or equivalent degree from an accredited college or university, a satisfactory quality of work, and an acceptable distribution of courses. Eligibility is based on personal and scholastic records and on the result of the Law School Admission Test. No applicant will be acceptable in transfer who is ineligible to return in good standing to a previously attended law school. From the applicants, a selection is made by the Committee on Admissions.

Information concerning the Law School Admission Test may be obtained from the Dean of the National Law Center or from the Educational Testing Service, 20 Nassau Street, Princeton, N. J. 08540; or 1947 Center Street, Berkeley, Calif. 94704. The test is administered at various centers of the United States in February, April, July, and November each year. Completed application blanks and fees must be received by the Educational Testing Service at least two weeks before the date of the test. It is not necessary that formal application for admission be made prior to taking the test.

### **ADVANCED STANDING**

Advanced standing toward the degree of Bachelor of Laws may be granted for work successfully completed in other law schools which are members of the Association of American Law Schools or are approved by the American Bar Association. Transferred credits will not be recognized in excess of those which might be earned in a similar period in the National Law Center.



Advanced standing will not be granted for law work already counted toward the Bachelor of Arts or other pre-legal degree.

### TUITION DEPOSIT

Every student admitted to the National Law Center as a candidate for the degree of Bachelor of Laws must submit a \$100 tuition deposit after receipt of notification of acceptance. This deposit is credited toward tuition and is refundable in full only in cases of applicants called into military service; \$50 will be refunded if notification is received by July 1 that the student does not intend to enter in the fall, \$20 will be refunded if notification is received by September 1.

Students admitted before April 1 must submit the deposit by May 1; those admitted after April 1, within three weeks of notification of acceptance.

### REQUIREMENTS FOR THE DEGREE

The student must have completed a residence period of three academic years (four years for evening students) and 84\* semester hours of required and elective courses, with a cumulative average of at least 65. At least one academic year of residence and 28 semester hours are required of students admitted with advanced standing. The work of the final semester or summer session must be completed while in residence at the National Law Center. Credits allowed by way of advanced standing are not included in computing the average required for graduation.

*Graduation Requirements.*—See page 41 for a statement of the graduation requirements.

### HONORS

The degree of Bachelor of Laws "with distinction" is awarded students who obtain a minimum cumulative average of 85.

### RESIDENCE

Candidates for the degree of Bachelor of Laws must complete a residence period of three academic years. Attendance in the day division for the fall and spring semesters constitutes residence for an academic year; similar attendance in the evening division constitutes residence for three-fourths of an academic year. Consequently, a day student must attend 6 semesters to meet residence requirements; an evening student must attend 8. Students authorized to take schedules of less than 10 hours in the day division or less than 6 hours in the evening division receive residence credit on a proportional basis. Students who attend the summer sessions receive fractional residence credit.

\* For students who began the study of law prior to September 1966, the requirement is 80 semester hours.



## CURRICULUM

**Required and Elective Courses.**—A program of required and elective courses has been developed to assure coverage of the basic courses and allow a degree of flexibility to meet the diverse interests of students. All first-year courses and three advanced courses are required, leaving a total of 43 hours of electives. Specially qualified students may secure approval to take 400 series courses. It is important that students plan ahead regarding their electives.

**Legal Writing.\***—Two semester hours of credit in legal writing are required for the degree of Bachelor of Laws. This requirement may be met by service on the *Law Review* or by the satisfactory completion of a seminar which requires a research paper, Law 344 *Legal Writing*, or Law 471 *Research in Public Law*.

**Trial Practice Court.**—Classroom instruction is conducted in pleading and procedure, trial and appellate practice, and evidence. This instruction includes grounding in the principles of the Federal Rules of Civil Procedure and the Federal Rules of Criminal Procedure. Students participating in the work of the Trial Practice Court serve as junior counsel and as senior counsel in the trying of cases. A special section of the court is devoted exclusively to the trial of patent cases. Experience in preparing and arguing appellate court cases is available through the course in Appellate Practice and Procedure and through the Case Club Competition.

**Patent Law.**—The following courses are particularly suggested for students interested in patent law: Unfair Trade Practices, Patent Law, Patent Office Practice, Patent Trial and Appellate Practice, Patent Licensing and International and Comparative Patent Law, and Federal Antitrust Laws. Additional courses recommended are Advanced Topics in Patent Law and Trade Regulation Seminar.

## Day Division

## FIRST YEAR

## FALL SEMESTER

Contracts I .....	2
Criminal Law and Procedure.....	4
Legal Method and Legal System.....	3
Personal Property .....	2
Torts I .....	3
Total semester hours.....	14

## SPRING SEMESTER

Constitutional Law .....	4
Contracts II .....	4
Real Property .....	2
Torts II .....	—
Total semester hours.....	14

## SECOND YEAR

## FALL SEMESTER

Civil Procedure .....	4
Elective .....	10
Total semester hours.....	14

## SPRING SEMESTER

Administrative Law .....	3
Evidence .....	4
Elective .....	7
Total semester hours.....	14

\* This requirement does not apply to students who began the study of law prior to September 1966.



## THIRD YEAR

## FALL SEMESTER

Elective .....	12
Legal writing requirement (See page 12) .....	2
Total semester hours.....	14

## SPRING SEMESTER

Elective .....	14
Total semester hours.....	14

## Evening Division

## FIRST YEAR

## FALL SEMESTER

Contracts I .....	2
Legal Method and Legal System.....	3
Personal Property .....	2
Torts I .....	3
Total semester hours.....	10

## SPRING SEMESTER

Contracts II .....	4
Criminal Law and Procedure.....	4
Torts II .....	2
Total semester hours.....	10

## SECOND YEAR

## FALL SEMESTER

Civil Procedure .....	4
Real Property .....	4
Elective .....	2
Total semester hours.....	10

## SPRING SEMESTER

Constitutional Law .....	4
Elective .....	6
Total semester hours.....	10

## THIRD YEAR

## FALL SEMESTER

Elective .....	8
Legal writing requirement (See page 12) .....	2
Total semester hours.....	10

## SPRING SEMESTER

Administrative Law .....	3
Evidence .....	4
Elective .....	3
Total semester hours.....	10

## FOURTH YEAR

## FALL SEMESTER

Elective .....	10
Total semester hours.....	10

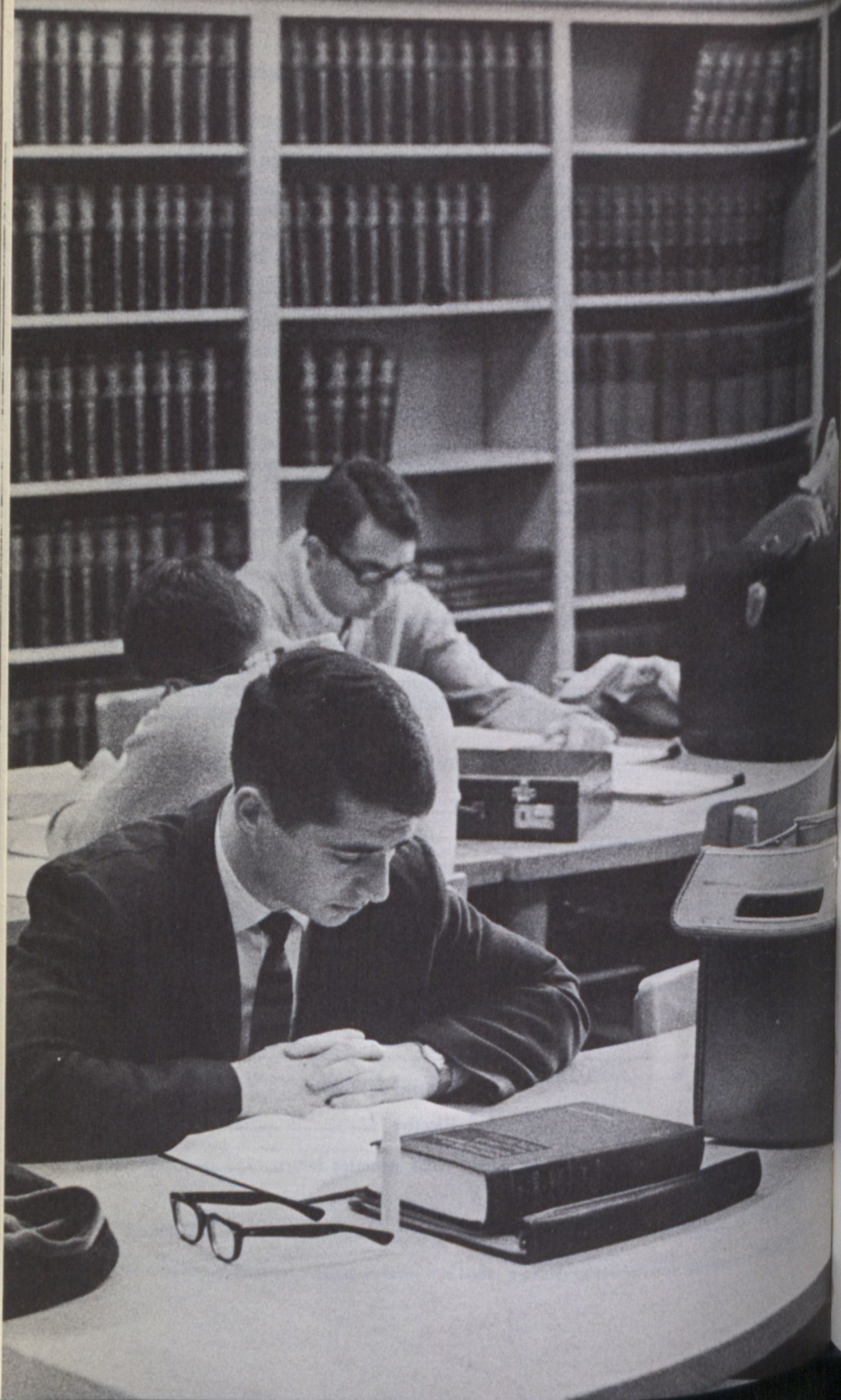
## SPRING SEMESTER

Elective .....	10
Total semester hours.....	10

## SUMMER TERM OR NINTH SEMESTER

Elective .....	4
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### THE LAW REVIEW

The *George Washington Law Review*, edited and managed by students of the National Law Center, is devoted exclusively to state and federal public law. The location of the University in the National Capital, where the primary sources of federal public law may be observed in operation, affords an unexcelled opportunity for specialization in this field.

The staff participates in a two-year *Law Review* program. The editorial staff is selected from among those students who have successfully completed the first year of *Review* work. Students receive four hours of academic credit for the two-year program.

### THE STUDENT BAR ASSOCIATION

Every student in the Bachelor of Laws program is a member of the Student Bar Association, which is organized to enable students to become better acquainted with problems of the profession, to foster professional ideals, and to bring about closer contact with members of the profession engaged in active practice of the law. The work of the Student Bar Association is carried on by various committees and by group and general meetings of a professional and social nature. From time to time lectures are given by outstanding authorities on legal and professional problems.

An important activity is the Van Vleck Case Club Competition, which provides an opportunity for training in appellate advocacy. First- and second-year students participate as contestants before courts composed of members of the Faculty and the local bar. Senior law students of the Case Club also sit as judges. The final argument is held before a court composed of distinguished federal judges.

The Legal Aid Program is under the joint sponsorship of The George Washington University Student Bar Association and the Junior Bar Section of the District of Columbia Bar Association. Participating students assist court-appointed attorneys in the preparation of cases for trial or appeal. Qualified second- and third-year students are eligible for participation in the program.

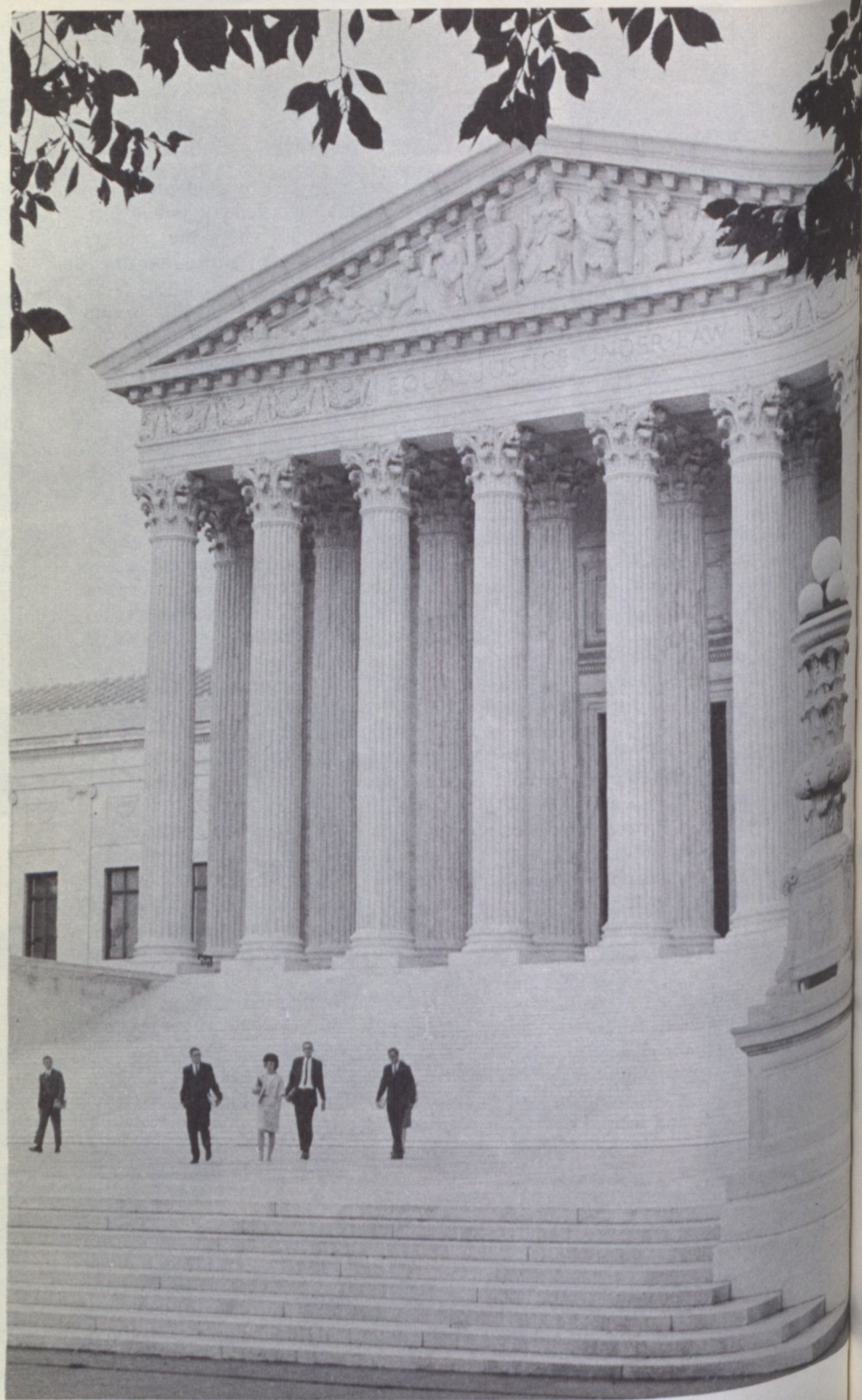
The International Law Society is another activity supported by the Student Bar Association. The Society offers a forum for speakers in this field and provides a way in which its members can participate in international legal activities in Washington. Recently, it has begun publishing a semiannual journal, *Studies in Law and Economic Development*.

In the ranking of member associations by the American Law Student Association, The George Washington University Student Bar Association has received first place twice and second place twice in past years.

### ORDER OF THE COIF

The Order of the Coif, a national honor society with chapters in over forty law schools, aims "to foster a spirit of careful study and to mark in a fitting manner those who have attained a high grade of scholarship." The George Washington University Chapter was established in 1926. Members are elected each year from the highest-ranking 10 per cent of the graduating Bachelor of Laws candidates.





The Supreme Court of the United States



## Master's and Doctoral Programs

THE ADMINISTRATION OF JUSTICE under law is a matter so vast and complex that some who hold the Bachelor of Laws degree feel the need for further study. The Master's and doctoral programs give students the opportunity to broaden and deepen their understanding of the law.

The Master of Laws candidate may elect courses of a diverse nature or select one of the following specialized programs: (1) Administrative Law: Economic Regulation; (2) Foreign Trade and Investment Law; (3) Government Procurement Law; (4) Law, Science, and Technology; (5) Patent and Trade Regulation Law; (6) Public International Law; and (7) Taxation. Graduates of these selected Master's programs have the field of specialization noted on their diplomas.

Programs leading to the degree of Doctor of Juridical Science offer the advanced student the opportunity to concentrate on research and writing in a specific area of interest to the legal profession.

### MASTER OF LAWS

#### ENTRANCE REQUIREMENTS

A Bachelor's degree from an accredited college or university\* and a Bachelor of Laws or equivalent degree from a law school which is a member of the Association of American Law Schools or is approved by the American Bar Association are required. The applicant must demonstrate (by a *B* average or equivalent performance measure, high class standing, *Law Review* experience, positions held, or professional achievements) that he is capable of Master's level work. Advanced standing is not granted for credits earned while a candidate for the first degree in law.

#### DEGREE REQUIREMENTS

The student must complete a residence period of not less than two semesters, which should be continuous. All requirements for the degree must be completed in this Law Center and in a period not exceeding three years from the time of registration for the degree. The student must complete 24 semester hours of 300 and 400 series courses (when appropriate, 200 series courses may be approved by the Dean), including Law 499 *Thesis*, and excluding Law 385 *Trial Practice Court*. A minimum average of 75 is required.

Candidates for the degree in a selected field of specialization must complete a minimum of 12 of the required 24 semester hours in courses of the selected field, including all required courses not previously taken. The balance of the program should be selected from 300 and 400 series courses. Recommended courses are listed under each field of specialization.

\*The Dean is authorized to make exceptions in appropriate cases.



## Fields of Specialization

### ADMINISTRATIVE LAW: ECONOMIC REGULATION

#### *Required Courses and Seminars*

- 295 Unfair Trade Practices
- 401 Seminar: Administrative Law
- 427 Economic Planning and the Law
- 463 Public Policy and Mass Media
- 466 Securities Regulation
- 493 Seminar: Regulation of Transportation I
- \*499 Thesis

#### *Recommended Courses and Seminars*

- 330 Federal Antitrust Laws
- 339 Collective Bargaining and Labor Arbitration
- 411 Intergovernmental Aspects of Technological Progress
- 425 Executive Function
- 428 Food and Drug Law
- 464 Selected Problems in the Regulation of Industry
- 467 Regulation of Securities Markets
- 491 The Civil Aeronautics Board and the Administrative Process
- 492 Seminar: Trade Regulation
- 494 Seminar: Regulation of Transportation II
- 495 Land Use Planning
- 496 Antitrust Problems in Regulated Industries

### FOREIGN TRADE AND INVESTMENT LAW

#### *Required Courses and Seminars*

- 210 Business Associations II
- 254 International Law and World Order
- 307 Comparative Law
- 421 European Common Market
- 440 Legal Aspects of International Business Transactions
- \*499 Thesis

One semester course in International Economics (Law students register in the Division of University Students for this Economics course.)

#### *Recommended Courses and Seminars*

- 265 Law and Accounting
- 309 Conflict of Laws
- 368 Patent Licensing and International and Comparative Patent Law
- 412 Use and Control of Atomic Energy and Space Technology
- 413 The Modern Corporation
- 425 Executive Function

\* May be waived in appropriate circumstances with approved substitutions for equivalent credit.



- 438 Seminar: International Commercial Transactions
- 441 Seminar: International Technical and Economic Assistance
- 466 Securities Regulation
- 490 Income Taxation of Foreign Business and Investment

## GOVERNMENT PROCUREMENT LAW

### *Required Courses and Seminars*

- 355 Government Contracts  
or
- 431 Government Procurement Law
- 432 Formation of Government Contracts
- 433 Performance of Government Contracts
- 434 Government Contract Claims and Litigation
- 435 Seminar: Government Contracts
- \*499 Thesis

### *Recommended Courses and Seminars*

- 270 Legislation
- 330 Federal Antitrust Laws
- 337 Taxation—Corporate
- 339 Collective Bargaining and Labor Arbitration
- 345 Legislative Drafting
- 359 Patent Law
- 412 Use and Control of Atomic Energy and Space Technology
- 414 Legal Protection against Technological Hazards
- 425 Executive Function
- 440 Legal Aspects of International Business Transactions

## LAW, SCIENCE, AND TECHNOLOGY

### *Required Courses and Seminars*

- 409 Seminar: Science and the Legal Process
- 410 Science Policy Formulation
- 411 Intergovernmental Aspects of Technological Progress
- 412 Use and Control of Atomic Energy and Space Technology
- 414 Legal Protection against Technological Hazards
- \*499 Thesis

### *Recommended Courses and Seminars*

- 270 Legislation
- 355 Government Contracts  
or
- 431 Government Procurement Law
- 359 Patent Law
- 423 Natural Resources Law and Policy

\* May be waived in appropriate circumstances with approved substitutions for equivalent credit.



- 425 Executive Function
- 428 Food and Drug Law
- 455 Legal Regulation of International Coercion
- 456 International Law of Air and Space
- 457 International Law of the Sea
- 463 Public Policy and Mass Media
- 468 Advanced Topics in Patent Law  
(Courses dealing with Science and Public Policy given in the departments of Sociology, Economics, Public Administration, and Engineering are recommended.)

#### PATENT AND TRADE REGULATION LAW

##### *Required Courses and Seminars*

- 295 Unfair Trade Practices
- 311 Copyright Law
- 330 Federal Antitrust Laws
- 359 Patent Law
- 362 Patent Office Practice
- 368 Patent Licensing and International and Comparative Patent Law
- 468 Advanced Topics in Patent Law
- 492 Seminar: Trade Regulation
- \*499 Thesis

##### *Recommended Courses and Seminars*

- 279 Taxation—Federal Income
- 355 Government Contracts  
or
- 431 Government Procurement Law
- 401 Seminar: Administrative Law
- 409 Seminar: Science and the Legal Process
- 410 Science Policy Formulation
- 411 Intergovernmental Aspects of Technological Progress
- 421 European Common Market
- 427 Economic Planning and the Law
- 428 Food and Drug Law
- 438 Seminar: International Commercial Transactions
- 440 Legal Aspects of International Business Transactions
- 490 Income Taxation of Foreign Business and Investment
- 496 Antitrust Problems in Regulated Industries  
(An appropriate course in the Department of Economics is recommended.)

#### PUBLIC INTERNATIONAL LAW

##### *Required Courses and Seminars*

- 254 International Law and World Order
- 391 United Nations Law and World Order
- 455 Legal Regulation of International Coercion
- \*499 Thesis

\* May be waived in appropriate circumstances with approved substitutions for equivalent credit.



- One of the following:  
 307 Comparative Law  
 449 Law of the Near East  
 473 Soviet Law  
 474 Chinese Law

*Recommended Courses and Seminars*

- 302 Admiralty  
 309 Conflict of Laws  
 412 Use and Control of Atomic Energy and Space Technology  
 421 European Common Market  
 437 Diplomatic and Consular Law and Practice  
 440 Legal Aspects of International Business Transactions  
 441 Seminar: International Technical and Economic Assistance  
 445 Negotiation: Concepts and Techniques  
 454 Legal Aspects of American Foreign Relations  
 456 International Law of Air and Space  
 457 International Law of the Sea  
 (Related courses given in the Institute for Sino-Soviet Studies, the School of Public and International Affairs, and the School of Government and Business Administration are recommended.)

TAXATION

*Required Courses and Seminars*

- 265 Law and Accounting  
 274 Taxation—Federal Estate and Gift  
 279 Taxation—Federal Income  
 337 Taxation—Corporate  
 478 Seminar: Tax Practice and Procedure  
 479 Seminar: Federal Tax Litigation  
 482 Taxation—Partnerships and Subchapter S  
 \*499 Thesis

*Recommended Courses and Seminars*

- 420 Seminar: Estate Planning  
 480 Taxation—Oil and Gas  
 481 Taxation—State and Local  
 483 Taxation—Exempt Organizations  
 484 Taxation—Special Corporation Problems  
 485 Seminar: Special Problems of Tax Policy  
 490 Income Taxation of Foreign Business and Investment

MASTER'S THESIS

Each candidate for the degree of Master of Laws is expected to write a Master's thesis (Law 499) under the supervision of a member of the faculty of the National Law Center. Four hours of credit will be granted for successful

\*May be waived in appropriate circumstances with approved substitutions for equivalent credit.



completion of the thesis. The purpose of this requirement is to demonstrate the ability of the student to perform research in a special area of the law and produce a scholarly paper containing the results of this research. The thesis is expected to be of substantially the same quality as a *Law Review* article. The requirement for a Master's thesis may be waived in appropriate circumstances.

The thesis in its final form must be presented to the Dean no later than the date specified in the Calendar. Three complete copies are required. It is the responsibility of the candidate to obtain from the Office of the Dean a printed copy of the regulations governing the styling and reproduction of theses.

Accepted theses become the property of the University and are deposited in the Law Library, where the duplicate copies are bound and made available for circulation. Permission to publish or adapt material must be secured from the Dean.

### GRADUATE COURSES IN OTHER DEPARTMENTS

The Master of Laws candidate is encouraged to take graduate courses related to his field of interest in other departments of the University. A maximum of 6 semester hours will be credited toward the degree for such courses. One hundred series courses may be taken for credit if the student does additional work, as prescribed by the department.

### DOCTOR OF JURIDICAL SCIENCE

#### ENTRANCE REQUIREMENTS

A Bachelor of Arts or equivalent degree from an approved college or university\*; a Bachelor of Laws or equivalent degree, earned with high rank, from a law school which is a member of the Association of American Law Schools or is approved by the American Bar Association; outstanding capacity for scholarly work in the field of law; and faculty approval of the applicant's dissertation topic. The applicant must submit an outline of his proposed topic in some detail, indicating by chapter and division within chapter the exact scope of the project. There should be a bibliography for each chapter listing books, reports, cases, and *Law Review* articles to be considered. Although the outline cannot predict every detail of the subsequent research, it must be sufficiently definite to afford the faculty a basis for evaluation.

#### DEGREE REQUIREMENTS

The candidate must complete (1) a residence period of not less than one academic year; (2) a course of study and research—designated by his consultative committee and approved by the faculty—of no less than 8 semester hours including *Jurisprudence*, unless previously taken, and two seminars in which research papers are required; and (3) an acceptable dissertation. The dissertation must be submitted no later than three years from the date of approval of the dissertation subject. The applicant who proposes to write on a comparative law topic must have a reading knowledge of the language in which the relevant

\* The Dean is authorized to make exceptions in appropriate cases.



materials are to be found. At the conclusion of his first year of residence, or at such other time as the faculty may set, the candidate must pass an oral examination in those fields of study selected by the consultative committee. This examination is conducted by the consultative committee and such other members of the faculty and qualified experts as are selected by the faculty.

No later than the date specified in the Calendar, the candidate must submit to the Dean three complete copies of the dissertation and two original copies of an abstract (not to exceed 600 words) of his dissertation. One copy of the abstract is for inclusion in the *Abstracts of Doctoral Dissertations* issue of the University Bulletin; the other is sent to University Microfilms, Inc., for inclusion in their monthly publication, *Dissertation Abstracts*, which is distributed nationally.

Printed copies of detailed regulations regarding the form and reproduction of the dissertation, preparation of the abstract, and services offered by University Microfilms, Inc., are available in the Office of the Dean. The successful candidate for the doctorate is required, before receiving his degree, to pay a fee to cover the expense of printing the abstract of his dissertation, and for the basic service rendered by University Microfilms, Inc. To be acceptable the dissertation must, in the opinion of the examining committee, constitute a sub-





stantial contribution to the field of law concerned and be suitable for publication. Additional information will be supplied by the Dean. Accepted dissertations, with accompanying drawings, become the property of the University and are deposited in the University Library, where the duplicate copies are bound and made available for circulation. Permission to publish or adapt material in them must be secured from the dean.

### Degree Programs for Foreign Students

THE NATIONAL LAW CENTER has several programs of study available to students trained in law outside the United States. These programs fall into two general categories: (1) those directed toward preparing the student for a bar examination in an American jurisdiction and (2) those that enable the student to return to his country with a more thorough understanding of some aspect of American law.

A student with a degree from a foreign law school is normally admitted to the Center as a Provisional Student, so that the faculty can evaluate his work before admitting him to degree candidacy. Appropriate credit will be granted for work taken as a Provisional Student.

In order to qualify for admission to the bar of an American jurisdiction, the student may apply for either the Bachelor of Laws (LL.B.) or the Master of Comparative Law (American Practice) (M.Comp.L. (Am. Prac.)) degrees. The LL.B. degree requires 84 semester hours of work in law school (credit is given for work in a foreign law school only in exceptional circumstances) and will qualify the student to take most U. S. bar examinations. The M.Comp.L. (Am.Prac.) degree requires 28 semester hours of work and satisfies the requirements of the District of Columbia Bar. *The student is cautioned to ascertain the requirements of the bar for which he intends to qualify prior to selection of his law school program.*

A student planning to return to his country may undertake a program leading to the degree of Master of Comparative Law (M.Comp.L.); or, if he has





outstanding qualifications, he may undertake advanced work leading to the Master of Laws (LL.M.) or Doctor of Juridical Science (S.J.D.) degree. The M.Comp.L. degree programs enable the student to gain a broader comprehension of the American legal system by taking basic courses in the Law Center. The LL.M. and S.J.D. programs allow the student to work in advanced or specialized legal fields.

### ADMISSION PROCEDURE

For general Admissions information concerning all National Law Center students see page 30.

Application, required records, and scores on the *Test of English as a Foreign Language* (see details below) must be received from *foreign applicants* no later than March 1 for the fall semester and November 1 for the spring semester.

### REQUIRED RECORDS

Applicants must request all educational institutions attended to send directly to the Dean official credentials listing subjects studied, grades received, examinations taken, and degrees received. Certified copies of diplomas and certificates from secondary schools and all colleges and universities attended are required. Records of state examinations and certificates are also needed. All records become the property of the University and *cannot* be returned.

### LANGUAGE TEST

Students from countries whose official language is not English are required to take the *Test of English as a Foreign Language*. Students are responsible for making arrangements for taking the test and should address inquiries to: TOEFL, Educational Testing Service, Princeton, New Jersey 08540, U.S.A. The completed application form should be returned to the Testing Service at Princeton well in advance of the beginning of the semester for which the applicant seeks admission. A \$10 test fee, which should be remitted with the application, entitles the student to have his test score sent to three different institutions. Registration for the *Test of English as a Foreign Language* does *not* constitute application for admission to The George Washington University.

The Bulletin of Information, obtainable without charge, contains description of the test as well as rules regarding application, fees, reports, and the conduct of the test; lists of examination centers; examination dates; and application blank. On the application for the test, the student should specify that the scores be sent to the Dean's Office.

### ENTRANCE REQUIREMENTS

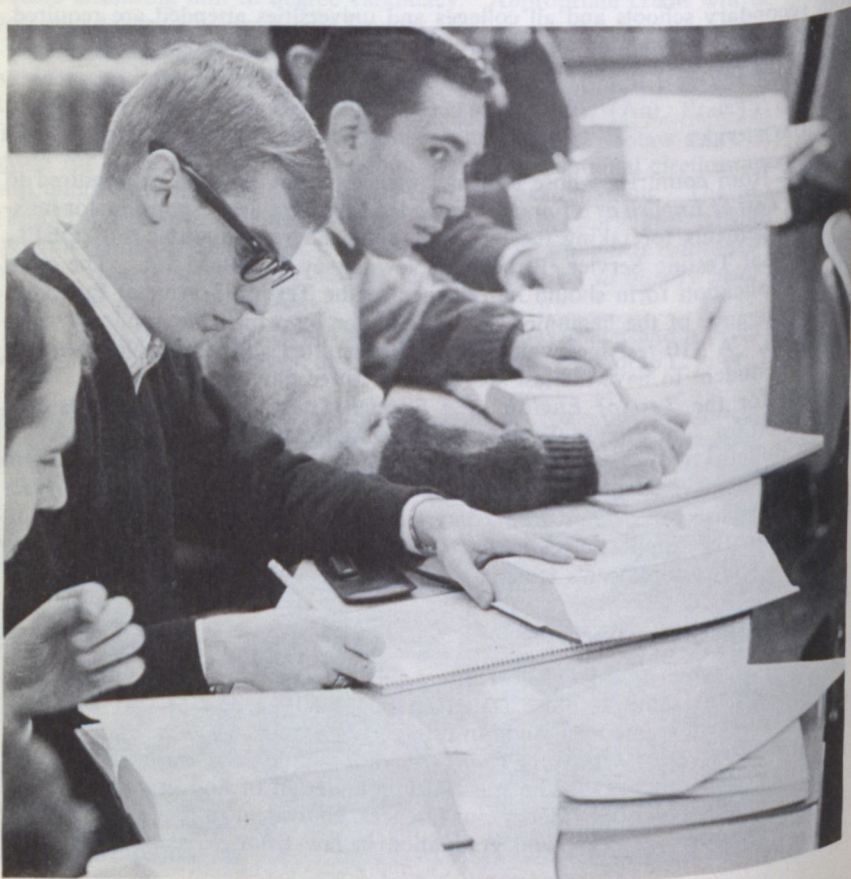
*For the Degree of Bachelor of Laws.*—Entrance requirements for foreign students are the same as those stated on pages 10–11, except that advanced standing is rarely granted for study in foreign law schools.

*For the Degrees of Master of Comparative Law and Master of Comparative Law (American Practice).*—The successful completion of and graduation from a course in arts, philosophy, letters, or sciences, equivalent to graduation from a gymnasium, lycee, or liceo; and graduation in law from a recognized foreign university.



*For the Degree of Master of Laws.*—Successful completion of and graduation from a course in arts, philosophy, letters, or sciences, equivalent to graduation from a gymnasium, lycee, or liceo; and graduation in law from a recognized foreign university. The applicant must demonstrate (by good academic record or equivalent performance measure, high class standing, positions held, or professional achievements) that he is capable of Master's level work and must demonstrate a sufficient background in the Common Law to undertake the Master's program.

*For the Degree of Doctor of Juridical Science.*—Successful completion of and graduation from a course in arts, philosophy, letters, or sciences, equivalent to graduation from a gymnasium, lycee, or liceo; graduation in law from a recognized foreign university; outstanding capacity for scholarly work in the field of law; and faculty approval of the applicant's dissertation topic. The applicant must submit an outline of his proposed topic in some detail, indicating by chapter and division within chapter the exact scope of the project. There should be a bibliography for each chapter listing books, reports, cases, and articles, to be considered. Although the outline cannot predict every detail of the subsequent research, it must be sufficiently definite to afford the faculty a basis for evaluation.





## DEGREE REQUIREMENTS

*Bachelor of Laws, Master of Laws, and Doctor of Juridical Science.*—Degree requirements for foreign students are the same as those stated on pages 11–13, 17–22, and 22–24.

*Master of Comparative Law.*—The student must complete a residence period of not less than two semesters, which should be continuous. All requirements for the degree must be completed in a period not exceeding three years from the time of registration for the degree. The student must complete satisfactorily 24 semester hours of approved courses of the Center, or of such other departments of the University as the faculty of the Center shall approve.

*Master of Comparative Law (American Practice).*—The requirements for this degree are the same as those for the degree of Master of Comparative Law except that the degree of Master of Comparative Law (American Practice) requires 28 semester hours of course work with a cumulative average of at least 65.

## Unclassified Students

THE FOLLOWING TYPES OF STUDENTS may be admitted to the National Law Center as Unclassified Students:

1. A candidate for a Bachelor of Laws degree with an above-average record at another law school which is a member of the Association of American Law Schools or is approved by the American Bar Association, may at the discretion of the Dean, be admitted as an unclassified student to earn credits for transfer to the other law school.

2. Graduates of law schools which are members of the Association of American Law Schools or are approved by the American Bar Association who wish to take advanced courses without pursuing degree programs. Applicants with inferior records will not be admitted.

Unclassified Students participate in the work of the course, take examinations, and have their grades recorded. Credit earned as an Unclassified Student cannot be credited toward a degree at this institution.\*

## Continuing Legal Education

MEMBERS OF THE BAR wishing to keep abreast of current developments in the law may register for any of the courses in the National Law Center on a non-credit basis as Continuing Legal Education Students. Such students do not take examinations in courses and no grades are recorded for their work.

A simplified admission and registration procedure is used and must be completed on or before the last day of regular registration for the appropriate semester. Continuing Legal Education Students pay only the tuition fee on the semester-hour basis. They may not participate in student activities or benefit from the medical privileges of the University.

\* The Dean is authorized to make exceptions in appropriate cases for Master's and doctoral students.



## GENERAL INFORMATION

### DAY AND EVENING CLASSES

DAY CLASSES meet in the mornings in fifty-minute periods and in the afternoons in fifty-minute periods and also in sessions of two fifty-minute periods, Monday through Friday. Trial Practice Court meets for two-hour periods on Saturday mornings.

Evening classes meet from 5:50 to 7:40 p.m. Monday through Friday. A four-credit course, e.g., Evidence, meets two evenings a week; a three-credit course, e.g., Administrative Law, meets two evenings a week for one-half the semester and one evening for the other half; a two-credit course, e.g., Personal Property, meets one evening a week. The evening division conforms to the standards of the day division, the full-time faculty participating in the instruction.

Examinations for both day and evening classes may be given in the afternoon only.

### SUMMER TERM

A term of two sessions, with day and evening classes, is offered in the summer. Continuing students and transfer students may register for either or both sessions. *No beginning students are admitted to the Bachelor of Laws program in the summer term.*

The summer term is shorter than a semester of the academic year, and, as a consequence, a student must attend two and one-half summer terms to receive residence credit for one academic year or attend one and one-half summer terms to receive residence for a semester.

A maximum of 6 semester hours may be taken each session by day students. Day students receive four-tenths of a semester of residence credit for each session of the summer term in which they are registered for 3 or more semester hours. A maximum of 4 semester hours may be taken each session by evening students. Evening students receive three-tenths of a semester of residence credit for each session of the summer term in which they are registered for 2 or more semester hours.

Summer students planning to take the New York bar examination must register at the beginning of the term for both sessions and must complete both and carry a program of at least ten classroom periods a week for day students and at least eight classroom periods a week for evening students.



## THE LAW LIBRARY

The Law Library of 72,900 volumes contains the official reports of the decisions of the courts of last resort of all states but one prior to the National Reporter System, and of some states complete to date; the National Reporter System, complete; the reports of the United States Supreme Court and lower federal courts, and the reports of federal administrative agencies; Shepard's Citations for the units of the Reporter System; the English Reports, Full Reprint; the English Law Reports; the Times Law Reports; the Dominion Law Reports; the United States statutes and codes; complete sets of statutes of all the states; the English statutes; the principal English and American digests and encyclopedias; collections of special reports and annotated cases; United Nations documents; and leading textbooks and treaties. Approximately 475 legal periodicals are currently received. A section of the library, consisting of books acquired from National University, is known as the National University Law Collection.

A student registered in the University is entitled to the reference use of the University Library. The Student Identification Card, issued upon the payment of fees, must be presented as identification.

Also available to law students are 50,000 bound volumes and 20,000 pamphlets of the former library of the Carnegie Endowment for International Peace, in the fields of international law and relations, history, and economics, in the University Library.





## Admission

APPLICANTS ARE URGED to submit application forms and complete credentials well in advance of the semester for which they seek admission. Two recent signed photographs and an application fee of \$25 for a degree candidate, \$5 for an Unclassified Student, must accompany the application.

Forms for application for admission or readmission are available at and should be returned to the Office of the Dean of the National Law Center, 720 Twentieth Street, N.W., Washington, D. C. 20006.

For further details concerning students from foreign institutions, see pages 24-27.

### APPLICATION FOR ADMISSION

*Bachelor of Laws Program.*—Beginning students are admitted only at the start of the fall semester.

To provide time for the evaluation of credentials of beginning students, all papers, including the Law School Admission Test score, should be received by May 1. This means that the November, February, or April Law School Admission Test should be taken. (See "Entrance Requirements," pages 10-11.)

All papers of transfer students should be received by the Office of the Dean no later than May 1 for the fall semester, December 1 for the spring semester, and one month prior to registration for the summer session for which application is made.

*Master's and Doctoral Programs.*—Students are admitted at the beginning of the fall semester, the spring semester, or any of the summer sessions.

Application for admission, together with all required credentials, must be received by August 1 for the fall semester, December 15 for the spring semester, and one month prior to registration for the summer session for which application is made.

*Unclassified Students.*—Students are admitted at the beginning of the fall semester, the spring semester, or any of the summer sessions.

1. Application for admission, with required credentials, for a student who wishes to earn credits for transfer toward a Bachelor of Laws degree at another law school (see page 27), should be received at the Office of the Dean at least one month prior to the first day of registration for the semester or summer session for which application is made.

2. Application for admission, with required credentials, for lawyers who wish to take graduate courses (see page 27), should be received at the Office of the Dean by August 1 for the fall semester, December 15 for the spring semester, and one month prior to registration for the summer session for which application is made.

*Continuing Legal Education Students.*—Students file a simplified form at any time prior to the first day of classes of the term concerned. No application fee is required, and no credentials are necessary.

### READMISSION

A student who was previously registered but did not attend during the most recent semester (summer term excluded) should file an application for readmission.



sion. Closing dates for readmission are the same as those for admission (see page 30).

If the student has attended one or more higher institutions during his absence from the University or if he applies as a degree candidate and was previously a nondegree student, he must have complete, official transcripts sent to the Dean.

## Registration

**BEFORE ATTENDING CLASSES** each student must present himself in person for registration. No student will be registered until proper credentials have been filed and approved (see "Admission").

No registration is accepted for less than a semester or one summer session.

A student may not register concurrently in George Washington University and another institution without the prior permission of the dean of the college, school, or division in which he is registered in this University. Registration in more than one college, school, or division of the University requires the written permission of the deans concerned, *prior to registration*. Allowance of credit for work done concurrently at another institution will be at the discretion of the Dean.

### ELIGIBILITY FOR REGISTRATION

No student who is suspended or whose record is not clear for any reason is eligible to register.

**New Student.**—Upon receipt of a *letter of admission* a new student is eligible for registration on the stated days of registration.

**Readmitted Student.**—A student previously registered who was not registered for courses during the preceding semester or summer session must apply for and receive a letter of readmission (see "Readmission," pages 30–31) before he is eligible for registration. A student registered for the spring semester of 1966–67 need not apply for readmission for the fall semester 1967–68. Such a student is a "Continuing Student."

**Continuing Student.**—A student registered for courses in the immediately preceding semester of the academic year is eligible to register upon presentation of his student identification card from the previous semester. The student registered for 1967 summer session courses, and not restricted to summer registration, is eligible for registration for the 1967–68 fall semester upon presentation of his 1967 summer session student identification card.

### TIME AND PLACE OF REGISTRATION\*

Registration is held in Stockton Hall, 720 Twentieth Street, N.W., during the following periods: *fall semester*, September 12 and 13; *spring semester*, January 25–27.

A late-registration fee of \$15 is charged each student who is permitted to register after the regular registration days.

Registration may be changed only with the permission of the Dean.

\* Hours of registration will be announced in the *Schedule of Classes*, which will be available well in advance of each semester.



## Fees and Financial Regulations

THE FOLLOWING FEES AND FINANCIAL REGULATIONS were adopted for the academic year 1967-68. (See page 33 for projected tuition increases for 1968-71.)

### Tuition Fees

All law students except candidates for the degree of Doctor of Juridical Science:	
Full-time program (11 hours or more), each semester.....	\$762.50
Part-time program, each semester hour.....	57.00
Doctor of Juridical Science,* including the final examination.....	1,625.00

### Graduation Fees

Bachelor's, Master's, Doctor's degrees.....	25.00
Fee for binding Master's Thesis.....	6.00
Fee for Microfilm Service and Printing Abstract of Doctoral Dissertation	55.00

### Residence Hall Fees (see page 43)

### Special Fees

Application fee (degree candidate), nonrefundable.....	25.00
Application fee (unclassified student), nonrefundable.....	5.00
Application fee for room reservation.....	100.00
Tuition deposit fee charged each student admitted to LL.B. degree candidacy	100.00
Special fee (Student Bar Association activities, <i>Law Review</i> , and other services), charged each student (except students registered for "continuous registration") for each semester or any part thereof except the summer term .....	10.00
Fee for special examinations, for each subject.....	5.00
Late-registration fee, for failure to register within the designated period....	15.00
Change fee, for each change in program involving one course or more than one course.....	2.00
Continuous Registration fee, to maintain "continuous registration" during any semester of absence from the University or after completion of tuition requirements.† Due and payable on the official days of registration	57.00
Service fee for deferred payment plan (See "Payment of Fees" below).....	5.00
Reinstatement fee, for reinstatement after financial suspension.....	10.00
Transcript fee, for each transcript of record.....	1.00

\* The tuition fee is to be paid at the rate of \$406.25 a semester for four successive semesters, exclusive of the summer term or terms. No "continuous registration" fee will be charged if a third year is required for completion of the degree requirements. If the Faculty should approve an extension of time, the student must maintain continuous registration and pay the continuous registration fee.

† Payment of the continuous registration fee entitles the student who is granted leave of absence to return and continue his work toward a degree under the academic requirements which were in force at the time of his first registration. The continuous registration fee applies toward neither financial nor residence requirements for the degree.

This fee does not apply to students granted military leave, see page 42.



Registration in the University entitles each student to the following University privileges: the services of the Placement Office; the use of University Library; gymnasium privileges; admission to all athletic contests, unless otherwise specified; subscription to the *University Hatchet*, the student newspaper; admission to University debates; medical attention and hospital services as described under "Health Services" (see pages 43-44). These privileges terminate and a student is no longer in residence when he withdraws or is dismissed from the University.

#### PROJECTED TUITION INCREASES 1968-71

In order that students and their parents may plan more realistically, tuition increases for the academic years 1968-69, 1969-70, and 1970-71 have been estimated as follows:

\*Increase by year (full-time students):

1968-69 .....	\$75.00
1969-70 .....	100.00
1970-71 .....	100.00

Increase by semester hour (part-time students):

1968-69 .....	3.00
1969-70 .....	4.00
1970-71 .....	4.00

It is not possible to project future economic data with certainty. Barring unforeseen developments, however, the above listed tuition schedule will be followed.

#### PAYMENT OF FEES

All fees are payable at the Office of the Cashier. Checks and postal money orders should be made out to The George Washington University. No student is permitted to complete registration or attend classes until all fees are paid.

Tuition and fees for each semester are due and payable in full at the time of each registration.

The Student Accounts Office has responsibility for creating, billing, and maintaining student accounts resulting from tuition and room and board charges. A student registered for six semester hours or more may sign a contract with this Office at the time of each registration permitting him to pay one-half of the total tuition and fees (except for fees payable in advance) at the time of registration and the remaining half on or before November 1, 1967 (for the fall semester) and March 13, 1968 (for the spring semester). A service fee of \$5 will be charged for the use of this deferred payment plan. The University will not obligate itself to notify the student, in advance, of the payment-due date for the second half of the semester charges. Students who fail to make any payment when due will be automatically suspended and may not attend classes until they have paid all accrued fees and a \$10 reinstatement fee and have been officially reinstated by the Student Accounts Office.

A student suspended for failure to meet payments when due may not be reinstated for the semester after two weeks from the date of suspension. Applications for reinstatement are to be made to the Student Accounts Office.

\* These yearly increases are also projected for the total fee for work leading to the degree of Doctor of Juridical Science.



An auditor pays all fees chargeable to the student registered for credit except the late-registration fee.

The National Law Center has been able in recent years to assist substantially all students in obtaining the financial aid they required, through full or partial scholarships, various loan programs, part-time employment, or a combination of these kinds of assistance. There are a number of sources for financial assistance available to students at the Law Center. These include the various state guaranteed education loans, loans under the National Defense Education Act, under the American Bar Association loan program, and under the United Student Aid loan program.

In addition, there are various plans available, through the Girard Trust Exchange Bank, Philadelphia, Pa.; Funds for Education, Inc., Manchester, N. H.; and the Riggs National Bank, Washington, D.C.; by which students may, if they meet various conditions, borrow money on a relatively short-term basis.

Full details concerning these funds are available in the Office of the Dean.

#### WITHDRAWALS AND REFUNDS

Applications for withdrawal from the University or for change in class schedule must be made in person or in writing to the Dean. Withdrawal from courses is permitted after the midpoint of a semester only in extraordinary circumstances. Notification to an instructor is not an acceptable notice.

In authorized withdrawals and changes in schedule, cancellations of semester tuition charges and fees will be made in accordance with the following schedule:

##### 1. Complete withdrawal from the University:

###### FALL SEMESTER

Withdrawal dated on or before September 22, 1967.....	90 per cent
Withdrawal dated September 25 to October 6, 1967.....	75 per cent
Withdrawal dated October 9 to October 20, 1967.....	50 percent
Withdrawal dated after October 20, 1967.....	none

###### SPRING SEMESTER

Withdrawal dated on or before February 2, 1968.....	90 per cent
Withdrawal dated February 5 to February 16, 1968.....	75 per cent
Withdrawal dated February 19 to March 1, 1968.....	50 per cent
Withdrawal dated after March 1, 1968.....	none

2. For a *change in status from full-time to part-time student* or for *partial withdrawal by a part-time student*, the above schedule applies to the difference in charges between the original program and the adjusted program continuing in effect.
3. A student enrolled in a full-time program who drops or adds a course and continues to be in a full-time program will have no financial adjustments of tuition made other than those involving course fees.

In no case will tuition be refunded or reduced because of absence from classes. Payment applies only to the semester for which a registration charge is incurred, and in no case will this be credited to another semester.

Authorization to withdraw and certification for work done will not be given a student who has not a clear financial record.

Students are encouraged to provide their own cash funds until they can make banking arrangements in the community.



## Financial Aid

### BACHELOR OF LAWS PROGRAM

#### SCHOLARSHIPS AND RESEARCH ASSISTANTSHIPS

APPLICATION AND CORRESPONDENCE concerning scholarships and research assistantships should be sent directly to the Dean. Unless otherwise specified, application and supporting credentials should be submitted no later than March 1 preceding the period for which the award is made.

*Charles Worthington Dorsey Memorial Scholarship* (1947).—Memorial to Charles Worthington Dorsey, LL.B. 1881, LL.M. 1882. A full-tuition scholarship for the course leading to the degree of Bachelor of Laws, awarded to a needy and promising graduate of this University with a Bachelor of Arts or equivalent degree. Ordinarily this scholarship is awarded once every three years.

*Honor Scholarships*.—Two scholarships available each year to students entering upon full-time study. Each scholarship provides a cash award for the first year in addition to tuition aid, in an amount depending on need, for all three years. These scholarships are awarded on the basis of outstanding college records, both academic and extracurricular; Law School Admission Test scores; and need. To retain the scholarship for the second and third years, the candidates must maintain a B average, both for each year and cumulative.

*Phi Delta Delta Scholarships* (1959).—Zeta Chapter of Phi Delta Delta Legal Fraternity (International), provides tuition aid to a woman student in the second year of the Bachelor's program who excelled in scholastic achievement and service to the Center in her first year.

*Research Assistantships*.—Available each year to students currently enrolled, preferably to applicants who are engaged in *Law Review* work. Each assistant receives an annual stipend. Awards are made on the basis of academic standing, financial need, capacity for leadership, and research and writing potential. Applications should be submitted no later than July 1.

*Research Scholarships*.—Available each year to students currently enrolled, preferably to applicants who are completing the second year. Scholarship awards are made on the basis of academic standing, financial need, capacity for leadership, and research and writing potential. Application should be submitted no later than July 1.

*Trustee Scholarships*.—Scholarships awarded each year to entering students, for tuition aid, in an amount depending on need, in the morning division. Candidates must have demonstrated qualities of leadership in addition to scholastic attainment. To retain the scholarship, the successful candidate must maintain a B average, both for each year and cumulative. Application must be made before March 1 to the Dean.

Tuition aid scholarships are also available to continuing second- and third-year full-time students with demonstrated scholastic ability, on the basis of financial need and capacity for leadership. Application should be made to the Dean prior to July 1. Scholarships are awarded after spring-semester grades are reported.



## LOAN FUNDS

Through the generosity of friends of the University a number of loan funds are available. Among them are the Robert Ash Loan Fund; the George R. Beneman Loan Fund; the Robert M. and Mary McConnel Cooper Loan Fund; the Harold L. and Violet George Foundation Loan Fund; The George Washington Law Association Loan Fund; the Jephson Educational Trust Loan Fund; the Law Association Loan Fund for the law classes of 1912, 1921, 1924, 1929, 1931, 1933, 1935, 1936, 1937, 1938, 1939, 1941, 1942, 1945, 1950, 1951, 1952, 1953, 1955, 1959, 1960, 1961, 1962, 1963, 1964, 1965; the Oscar Lawler Memorial Loan Fund; the Horace L. Lohnes Memorial Assistance Fund; the Mike Pelekiri Loan Fund; and the Orville Hassler Walburn Memorial Loan Fund. Applications for loans should be made in the Office of the Dean.

## MASTER'S AND DOCTORAL PROGRAMS

## FELLOWSHIPS AND RESEARCH OPPORTUNITIES

Application should be made before March 15 preceding the period for which the award is made. The applicant should submit an application for admission as a degree candidate and a personal letter applying for a fellowship to the Dean. The letter of application should contain complete biographical data, information as to experience in practice or teaching and his draft or military status, copies of or citations to his published legal writings, and such other information as he believes will be of assistance in the consideration of his application. He should arrange for letters of recommendation to be sent from two members of his law faculty directly to the Dean. His academic rank in class should be included either in the transcript of his law school record or in the letters of recommendation.

*Thomas Alva Edison Fellowship.*—A \$5,000 fellowship for advanced study of the patent and related systems is made available annually to the Patent, Trademark, and Copyright Research Institute of the University by the Thomas Alva Edison Foundation for award to a qualified advanced student in one of the schools of the University. The recipient of the fellowship is expected to follow an approved program of research under the supervision of a member of the Staff of the Patent, Trademark, and Copyright Research Institute assigned as counselor to the fellow. He must satisfactorily complete the degree requirements, including a thesis on a subject in a field of the Institute's interest. This fellowship can be made available to the same candidate for two consecutive years when the Research Institute considers such extension to be in the best interests of the fellowship objectives.

*Fellowship in Government Procurement Law.*—A fellowship of \$5,000 plus tuition and student fees, for a program leading to the degree of Master of Laws with specialization in Government Procurement Law. The Fellow takes 10 semester hours of approved courses over two semesters. The balance of his time is spent in research, writing, and editorial work under the guidance of the staff of the University's Government Contracts Program. The candidate is chosen on the basis of ability to do superior legal work, demonstrated by law school record or work experience, and genuine interest in government procurement law.



*Richard Paul Momsen Fellowship for Brazilian Graduate Law Students.*—Bequest of Richard Paul Momsen, LL.B. 1912. Awarded on an alternate-year basis, beginning with the academic year 1967–68, for the study of U. S. constitutional law.

*Teaching Fellowships.*—Available each year to prospective candidates for the Master of Laws degree. Each fellow receives an annual stipend of \$5,000, plus tuition for the academic year. Teaching fellows follow an approved program of study and research, assist members of the Faculty in the guidance of first-year students, and supervise student work in legal bibliography and the drafting of legal instruments. Upon satisfactory completion of the year's work, a fellow is recommended for the degree of Master of Laws.

*Research Study Opportunities.*—In addition to the above fellowships, research assistantships with opportunity for graduate study are available with the Program of Law, Science, and Technology; and the Government Contracts Program.

## Prizes

*American Security and Trust Company Award.*—A cash award to a graduating senior for the most effective work in the course in estate planning.

*Charles Glover Prize.*—Established by Charles Carroll Glover, Jr., an Honorary Trustee of the University, in memory of his great-grandfather, an illustrious member of the bar of the District of Columbia. Consists of selected law books. Awarded annually to the student who has attained the highest average grade in the third-year, full-time course.

*Kappa Beta Pi Prize.*—A copy of Blackstone's *Commentaries* or a legal dictionary awarded annually by Eta Alumnae Chapter to the woman law student who attains the highest average for the freshman year.

*John Bell Larner Prize.*—By bequest, a medal is awarded annually to the member of the graduating class who attains the highest average grade in the entire course for the degree of Bachelor of Laws.

*John Ordronaux Prizes.*—By bequest, \$75 is awarded annually to the student who has attained the highest average grade in the first-year, full-time course; and \$75 to the student who has attained the highest average grade in the second-year, full-time course.

*Jennie Hassler Walburn Prize.*—A cash award to the outstanding student in the field of civil procedure, established by the will of the late Professor Orville Hassler Walburn in memory of his mother.

## Regulations

### ACADEMIC WORK LOAD

*Bachelor of Laws Candidates.*—Bachelor of Laws candidates without substantial outside employment may take a program of studies of 14 hours a week. Such students may take courses in the evening only if they are not available in



the day time and if a majority of the hours taken are in day courses. The Dean is authorized to approve 15-hour programs in exceptional cases. Students with 20 hours or more of outside employment, whether in the day or evening division, must take a limited program of studies not exceeding 10 hours a week. Students taking a majority of their classes in the evening may not take more than 10 hours a week; the minimum load is 8 hours, except in special cases where 6 may be approved by the Dean for a limited time. A minimum schedule of 11 hours in the day division is required except in exceptional circumstances when a reduced program for continuing students is authorized by the Dean.

Students may transfer from the day division to the evening division only with the permission of the Dean.

Students taking more than 8 hours in the day division or 4 hours in the evening division must have the permission of the Dean to take a Bar Review course.

*Master's Candidates.*—Master's candidates without substantial outside employment may take a maximum of 12 hours a week. Students with 20 hours or more of outside employment must take a limited program of study not to exceed 8 hours a week. The minimum load is 4 hours unless approval for fewer hours is given by the Dean for a limited time.

#### ATTENDANCE

Regular attendance at classes is required and is necessary for successful work. A student who is deficient in class attendance in any course may be barred from taking the examination.

#### CHANGES IN PROGRAM OF STUDIES

A student may not drop or add courses or change from one section to another of the same course without the approval of the Dean.

#### RESEARCH PAPER IN LIEU OF EXAMINATION

The preparation of a research paper is required in lieu of an examination in seminars and in other courses, as indicated in the course descriptions by (RP). The research paper must be submitted by the last day of classes of the semester; for sufficient reason, the instructor may extend this time to the end of the examination period. No further extension may be granted. In general, a qualified LL.B. candidate may register for one such course; in special cases he may register, with the approval of the Dean, for two.

#### EXAMINATIONS

Written examinations are held at the end of most courses. Every student is required to take the regular examinations unless excused. No excuse for absence will be granted except by the Dean and then only for illness or other emergency. Application for excuse must be made in writing not later than one month after the date of the examination. An entry of *I*, incomplete, will be made on the record of a student thus excused. To receive credit for the course,



he must take the next regularly scheduled examination. The examination may not be taken after exclusion for low scholarship.

Permission to take an examination before the regularly scheduled date will not be granted. Permission to take a postponed examination is limited to the situation provided for in the preceding paragraph.

A special examination will be granted only to a student entitled to take a postponed examination, who is a candidate for a degree to be conferred at a convocation which precedes the next regular examination in the subject. Written application, showing sufficient cause, should be addressed to the Dean, and approval will be granted at his discretion.

If a student fails to take an examination, a grade of 45 will be recorded unless he has been excused from the examination as provided above or has obtained the Dean's permission to drop the course.

## GRADES

Grades are given in numerical terms equivalent to letter grades as follows: 85-100, *A*, excellent; 75-84, *B*, good; 65-74, *C*, satisfactory; 55-64, *D*, poor—below standard for graduation; 45-54, *F*, failure. In courses 321-22, 365, 366, 385, and 386 grades are *CR*, credit; *NC*, no credit. A student who has been excused from failure to take a regularly scheduled examination is given the grade of *I*, incomplete, and a student who has been barred from taking an examination because of excessive absences is given the grade of *EA*. See "Examinations" above, for grade upon failure to take an examination. Grades between 55 and 100 indicate that the work has been completed and credit given for the courses. Grades between 55 and 64, however, do not represent satisfactory work and adversely affect a student's cumulative average. No credit is given for grades below 55. A student may not repeat a course he has failed.

The cumulative average of a student includes all grades in all courses taken while he is a candidate for a particular degree. When a course is repeated (see "Academic Dishonesty," page 41), both the first grade and the subsequent grade or grades are counted in the cumulative average.

## EXCLUSION AND PROBATION FOR POOR SCHOLARSHIP

*Candidates for the Degree of Bachelor of Laws\*.*—A student whose cumulative average at the end of any semester falls below 65.0 but above 64.0 will be notified that he is on probation. If such a student fails to raise his cumulative average to 65.0 at the end of the next semester, he will not be permitted to register for any succeeding semester unless he petitions for and receives the permission of the Scholarship Committee.

A student whose cumulative average at the end of any semester falls below 64.0 will not be permitted to register for any succeeding semester unless he petitions for and receives the permission of the Scholarship Committee so to register.

A student who fails more than one course over his entire period of law study will not be permitted to register for any succeeding semester unless he petitions for and receives the permission of the Scholarship Committee.

\* These rules apply to new and readmitted students beginning with the 1966-67 fall semester.



A student who is not permitted to register under the foregoing provisions, will be excluded as of the beginning of the semester for which he was ineligible to register.

Students who are registered at the time they receive notice that they will not be permitted to register for the next semester are entitled to withdraw from school and to receive a full refund of the tuition for the semester, or to complete the work for which they are registered.

Any student excluded may petition for reinstatement; if he can demonstrate that his low grades were due to circumstances beyond his control and that he has the capacity to pursue the study of law with a definite likelihood of success, he may be readmitted subject to such conditions as may be imposed by the Scholarship Committee.

Despite the above provisions, a student will be allowed to complete his first two semesters of law study before he is denied permission to register for a succeeding semester.

The term "semester" includes a session of the summer term.

*Candidates for Masters' and Doctoral Degrees.*—A candidate for a Master's or doctoral degree whose work is not satisfactory in the opinion of the faculty, taking into consideration the requirements and standards for the degree, may, by action of the faculty, be excluded at the end of the semester for which he is currently registered.

*Unclassified Students.*—An unclassified student whose work is not satisfactory in the opinion of the faculty may, by action of the faculty, be excluded at the end of the semester for which he is currently registered.

#### SUMMER SCHOOL CREDIT

Students planning to attend summer school sessions at other law schools and desiring to use credits obtained at such schools in their Bachelor of Laws program at this Center must first have the courses they wish to take approved by the Dean. In no event will credits be recognized in excess of those which might be obtained in a similar period in this program.

#### TRANSCRIPTS OF RECORD

Official transcripts of student records will be issued on request of the student or former student. A fee of one dollar is charged for each transcript. No transcript will be issued for a person who does not have a clear financial record.

#### CONTINUOUS REGISTRATION

Degree candidates are expected to maintain continuous registration until all degree requirements are satisfied. Students who have completed course registration may maintain continuous registration by paying the "continuous registration" fee (see page 32). By failing to register for one semester or more, the student breaks his registration and must be readmitted (see "Readmission," pages 30-31). A "Readmitted Student" is required to satisfy the curriculum requirements existing at the time of his readmission.

Students must be registered during the summer if they elect to take courses, are taking required examinations, are receiving guidance toward theses or dis-



sertations, or are expecting to graduate at the end of the Summer Sessions. Students granted military leave, see page 42.

### GRADUATION REQUIREMENTS

Diplomas are awarded at a February Convocation, a June Commencement, and in September.

To be recommended by the Faculty for graduation, a student must have met the admission requirements of the school; completed satisfactorily the scholarship, curriculum, residence, and other requirements for the degree for which he is registered; and be free from all indebtedness to the University. Registration, either for course work or on the "continuous registration" fee basis, is required for the semester or summer session immediately preceding the awarding of the degree.

*Application for Graduation.*—Application for graduation must be filed and the appropriate fee paid at the time of registration for the last semester or summer session of the final year. Students completing degree requirements during the Summer Sessions will be awarded diplomas (no formal convocation) September 30, *provided* they have completed all degree requirements and have applied for graduation as a part of registration for the Summer Sessions.

### ACADEMIC DISHONESTY

Evidence of dishonesty on the part of any student will result in his suspension by the Dean.

A student found guilty of dishonesty will be excluded and will be deprived of credit for all courses in which he is enrolled during the semester in which the dishonest act occurs. A disciplinary grade of "Failure—Academic Dishonesty" will be recorded for each such course, and this grade will be employed in computation of the cumulative average.

A student who is readmitted after suspension because of academic dishonesty may be required to repeat for grade all courses for which a disciplinary grade was recorded, and both the grade earned on repetition and the disciplinary "Failure—Academic Dishonesty" grade will be employed in computation of the cumulative average.





### MILITARY LEAVE

A student called to active duty will be granted military leave for the period of active duty, upon presentation to his Dean of a copy of his orders and a petition for such leave. The maintenance of "continuous registration" is not required of the student on military leave; however, he must apply for readmission to the University prior to the semester in which he expects to return.

### RIGHT TO CHANGE RULES

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

### RIGHT TO DISMISS STUDENTS

If a student knowingly makes a false statement or conceals material information on an application for admission, registration card, or any other University document, his registration may be canceled and he will be ineligible (except by special action of the Faculty) for subsequent registration.

The right is reserved by the University to dismiss or exclude any student from the University or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable to do so.

### PROPERTY RESPONSIBILITY

The University is not responsible for the loss of personal property in any University building. A "Lost and Found" Office is maintained in the Student Union.

## Student Services

### RESIDENCE HALLS

COMPLETE INFORMATION concerning the University's residence halls is available at the Office of the Dean of Men or the Office of the Dean of Women, The George Washington University, Washington, D. C. 20006.

Information concerning off-campus housing near the University may be obtained at the Office of the Dean of Men. The reservation of rooms in private houses must be made by students.

Admission to the University does not include a room reservation. The student will receive with his notification of acceptance a residence hall brochure, an application for residence hall space, a medical examination form, and a declaration of intent to attend the University. If a student wishes to apply for residence hall space, the medical examination form must be completed by the applicant and his physician and returned to the University Health Services Office. The application for residence hall space must be accompanied by a \$100 non-refundable deposit, which is credited toward the fall-semester room charge. Rooms are leased for the academic year, and payment must be made in advance of each semester. The following residence hall rates are for the two semesters of the academic year 1967-68 and are subject to change in future years.



## 1967-68 RESIDENCE HALL RATES FOR TWO SEMESTERS

Madison Hall (men): room and food service, \$1,050; room only, \$500  
 Graduate Women's Hall (women): room and food service, \$1,235; room only, \$685

## FOOD SERVICE

Well-balanced meals are served cafeteria style seven days a week (20 meals). Food service payment does not cover University holidays or vacation periods. All meal cards admit to the dining rooms in Thurston and Mitchell Halls. Residents of Madison Hall and the Graduate Women's Hall may use the dining room on the second floor of the Student Union.

## HEALTH SERVICES

The Health Services Staff assists students with their medical needs by advice and treatment, by proper referral when necessary, and by cooperation with other physicians. For medical emergencies and health consultations there is, on the campus, a Student Health Clinic open from 9 a.m. to 10 p.m., Monday through Friday, during the academic year and Summer Sessions, with physician and nurse in attendance. There is also a rest room for women, with a graduate nurse in charge. For night and weekend emergencies, students may go to the emergency room of the University Hospital for treatment. The basic fee for this visit will be paid by the Health Services, and all other charges will be the responsibility of the student. This arrangement is for emergency care only.

Medical privileges include: (1) three visits in any one illness by a member of the Health Services Staff, office or residence (District of Columbia); (2) hospitalization, including board and nursing, in the University Hospital for not more than one week during any twelve-month period—the necessity to be determined by the Director of Health Services.\* All additional hospital charges for operating room, anesthetics, laboratory, X-ray, medications, or any special services must be paid by the student. Expenses incurred for examinations and treatment by specialists, such as eye refraction and provision of glasses; orthopedic examinations and application of cast or other appliance; laboratory and X-ray work; and surgical operations must be paid by the student.

These medical benefits apply only to illness or disability incurred while currently enrolled in the University. They do not apply to illness or disability incurred between the last day of examinations for a semester or summer session and completion of registration for the next semester or summer session.

The student is allowed, if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

Rules: (1) the Director of Health Services is empowered to limit or deny the medical benefits where, in his discretion, a student has, by his misconduct or breach of the rules of the University, made himself ineligible; (2) the Director of Health Services has authority to determine the necessity and length of hos-

\* See rule (4) for exception.



pitalization; (3) a student not currently enrolled or one who has severed his connection with the University is ineligible for medical benefits; (4) hospitalization is not available to those students availing themselves of other hospitalization coverage for the same illness.

The University is not responsible for injuries received in intercollegiate or intramural games, or in any of the activities of the departments of Physical Education, Health, and Recreation.

#### HEALTH AND ACCIDENT INSURANCE

In addition to the above services, the Health Service staff has arranged for Health and Accident Insurance, on an elective basis, for all full-time students. This policy covers the participant for 12 months whether at home, at the University, or elsewhere.

Current yearly cost is \$26.40 payable at the fall registration. Arrangements can be made to pay in two installments of \$13.20 at the fall and spring registrations.

This policy contract is between the individual student and the insurance carrier and is accepted at any hospital or emergency room that accepts this type of medical work. Details of the policy are available at the Health Services Office.

#### STUDENT EMPLOYMENT

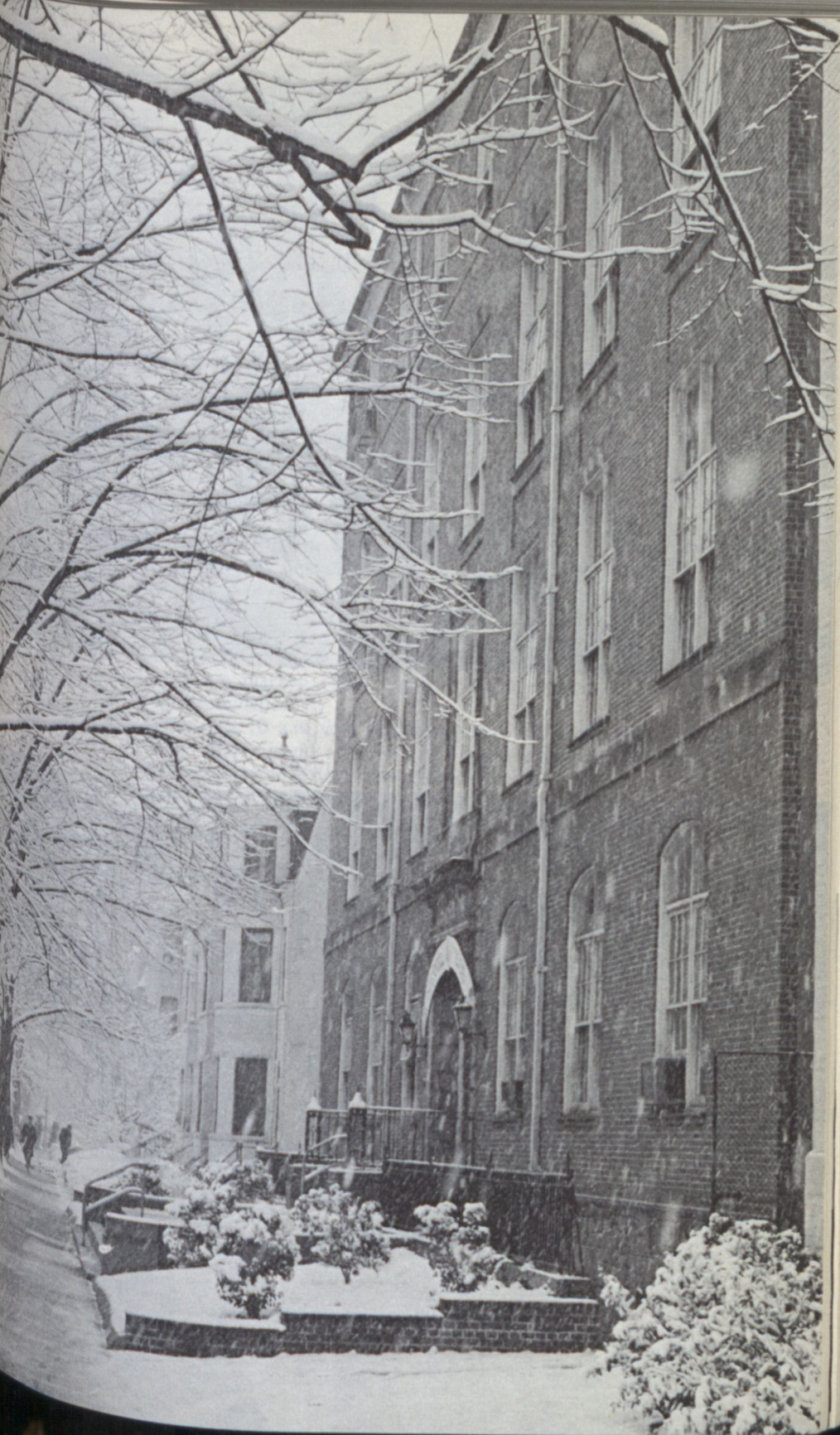
The Law Center helps in the placement of its students and maintains a placement service for that purpose. In addition, the University Placement Office, 2114 G Street, N.W., provides assistance to students seeking full-time, part-time, or temporary employment. This Office maintains a registry of positions available and refers qualified applicants for consideration. Information is also available on Civil Service examinations.

A student taking more than ten semester hours must limit outside employment to less than twenty hours (see "Academic Work Load," pages 37-38). It is urged that full-time students refrain from engaging in outside employment during their first year. Although work in some special areas may contribute to the learning and experience of the student, as a general rule it will compete with time needed for adequate study and preparation, which are at the heart of a good legal education.

#### PLACEMENT SERVICE

The Law Center takes a continuing interest in the placement of its graduates in private practice and governmental service, as well as with industry and commerce. The Dean, the faculty, and the Placement Office cooperate in collecting information from alumni, law firms, and government agencies concerning opportunities in legal positions throughout the country. Senior law students and recent graduates are urged to keep in touch with the Law Center Placement Office.











## COURSES OF INSTRUCTION

THE COURSES OF INSTRUCTION listed below are subject to change. The University reserves the right to withdraw any course announced.

The number of hours of credit given for the satisfactory completion of a course is indicated in parentheses after the name of the course. Thus, a year course giving two hours of credit each semester is marked (2-2), and a semester course giving two hours of credit is marked (2).

Courses and seminars marked (RP) require the preparation of a research paper in lieu of an examination.

Day classes begin at 9:10 a.m. and run throughout the entire morning and afternoon. Evening classes begin at 5:50 p.m. Many examinations for both day and evening classes may be given in the afternoons only.

### COURSES FOR BACHELOR OF LAWS CANDIDATES

Qualified third-year students may, with the permission of the Dean, take 400 level courses.

#### REQUIRED COURSES—FIRST YEAR

- |  |   |
|--|---|
| <p><b>110 Constitutional Law (4)</b></p> <p>Basic principles of American constitutionalism; judicial function in constitutional cases; implementation of doctrines of separation of powers, federalism, limited government; development and exercise of national powers; introduction to civil rights and liberties. (Spring—day and evening)</p>  | <p style="text-align: right;">Dixon, Miller, Barron, H. Green</p> |
| <p><b>115-16 Contracts I-II (2-4)</b></p> <p>Legal remedies of contracting parties, including damages in contract and quasi-contract, specific performance, reformation, rescission, remedies in tort; acts creating and terminating contractual rights, including offer and acceptance, mistake, problems of proof; function of consideration; conditions; assignments; third-party beneficiaries; effect of changed circumstances; protection of the client's interests upon breach or threat of breach by the other party. Emphasis on problems of analysis, draftsmanship, adversary method. (Academic year—day and evening)</p> | <p style="text-align: right;">Freedman, Pock, Nash, Ginsburg</p>  |



**125 Criminal Law and Procedure (4)**

D. Green, Starrs, Robinson

Origin and purposes of criminal law; elements of criminal liability; mental disorders; crimes against the person, property, and against both; statutory offenses; criminal procedure, with consideration of Federal Rules of Criminal Procedure. (Fall—day; spring—evening)

**135 Legal Method and Legal System (3)**

Davison, H. Green, J. Brown

Introduction to substantive and procedural law dealing with basic concepts; training in method and technique of case law and legislation using modern case records; practice in use of law books and in legal writing; importance of language in law; legal reasoning and use of precedents under doctrines of stare decisis, law of the case, and res judicata; development of Anglo-American legal system; organization of judiciary and bar, stressing enforcement of ethical standards. (Fall—day and evening)

**145 Personal Property (2)**

Kayton, Clingan, Potts, Ginsburg

Concepts, meanings of term "possession," methods of acquiring ownership, problems in bailment cases, basic principles of liens and pledges. (Fall—day and evening)

**150 Real Property (4)**

Schiller, Starrs, J. Brown

Historical background of the law of estates and conveyancing; types of estates; dower and curtesy; landlord and tenant relationship; concurrent estates; future interests at common law and after the Statute of Uses; Rule Against Perpetuities; incidents of divided ownership, as waste; natural rights. (Fall—evening; spring—day; summer 1967)

**161-62 Torts I-II (3-2)**

Merrifield, Siedelson, Park

Liability for harm to person or property. Intentional torts, negligence, nuisance, products liability, misrepresentation, defamation, and invasion of privacy; fault and other bases for shifting losses; causation; damages; effects of liability insurance; problems under Federal Tort Claims Act. (Academic year—day and evening)

**OTHER REQUIRED COURSES****202 Administrative Law (3)**

Davison, Miller, Park

Position of administrative process in separation of powers, including status of administrative personnel, administrative hearings, judicial scrutiny of administrative action, discretion, rule-making—particularly as relating to federal administrative agencies. (Spring—day and evening; summer 1967)

**215 Civil Procedure (4)**

D. Green, Sharpe, Barron

Mechanics of litigation—rules which govern process by which rights and duties studied in substantive law courses are enforced; pleadings, discovery, pre- and post-trial motions, jurisdiction and venue, equity jurisdiction and trial by jury, former adjudication. Emphasis on Federal Rules of Civil Procedure but principles and main problems indigenous to all procedural systems are developed. (Fall—day and evening; summer 1967)

**240 Evidence (4)**

Seidelson, Robinson

Preparation and presentation of evidence, including proof of writings; qualification and examination of witnesses with emphasis on impeachment;



privilege; opinion testimony; determination of relevancy; demonstrative, experimental, scientific evidence; application of the hearsay rule.  
(Spring—day and evening; summer 1967)

### ELECTIVE COURSES

- 205 **Appellate Practice and Procedure** (2) Freedman  
Students participate in preparing an actual criminal case on appeal, starting with review of trial transcript and culminating with preparation of brief and oral argument before U.S. Court of Appeals for the District of Columbia Circuit or the U.S. Supreme Court. Appellate practice and procedure studied through texts; consultation with appellate judges, law clerks, and attorneys with cases pending on appeal; observation of arguments in the Supreme Court and the Court of Appeals. Admission by permission of the instructor. (Not offered 1967-68)
- 209 **Business Associations I** (2) Schiller, Sharpe, Barron, Robinson  
Legal principles concerning association in business by agency, partnership, other unincorporated forms, and corporations; creation, form and nature of agency, partnership and corporation; basic principles of agency and partnership and introductory related principles of corporation law.  
(Fall—day and evening; summer 1967)
- 210 **Business Associations II** (4) Kirkpatrick, Manne, Rothschild  
Corporate law, with emphasis on operations and financing of corporations. Control of corporations, action by corporate directors, officers, shareholders. Control devices. Directors' and shareholders' duties of care and loyalty, insiders' transactions in shares of the corporation. Derivative suits, kinds of shares, dividends, corporate distributions. (Spring—day and evening; summer 1967)
- 219 **Commercial and Investment Paper** (3) Ledakis, Albert, Rothschild  
Bills of exchange, promissory notes, checks, bonds, certificates of stock, other forms of commercial and investment paper in the context of their business function and legal setting under common law and uniform laws, including proposed Uniform Commercial Code. (Spring—day and evening; summer 1967)
- 224 **Sales and Sales Financing** (3) Ledakis, Albert, Rothschild  
Law relating to the sale and distribution of goods and to the security financing devices utilized in this connection, with particular attention to the effect of existing and proposed uniform laws. (Fall—day and evening; summer 1967)
- 235 **Domestic Relations** (2) Potts, Seidelson, Clingan, Ferster  
Marriage, annulment, and divorce; adoption and custody of children; economic relations. (Spring—day and evening; summer 1967)
- 238 **Equity** (2) Nutting, Pock, Rothschild  
Nature of equity jurisprudence through analysis of selected problems in equity; historical development of equity, including problems of merger of law and equity; use of equity jurisdiction offensively and defensively, including multi-party actions, injunction of executive and legal actions, equitable abstention; emphasis on fashioning of equitable remedies. (Fall—evening; spring—day; summer 1967)



**243 Federal Jurisdiction (2)**

Albert, Barron

Relationship of federal courts to Congress and to the states, through analysis of cases dealing with federal judicial functions (including problems of advisory opinions, standing to litigate, justiciability), federal questions in federal courts, federal review of state court decisions (including relation between state and federal substantive law, procedural problems in exercising review, application of law to fact). (Spring—day and evening; summer 1967)

**251 Insurance (2)**

Schiller, Rothschild

A primary risk distributing medium and the rules by which legislative, administrative, judicial bodies seek to promote its benefits and avert its dangers. Includes insurance marketing, insurable interest, subrogation, transfer of insurance benefits to nonpolicyholders, coverage and other insurance policy provisions, disposition of claims. (Fall—day and evening; summer 1967)

**254 International Law and World Order (3)**

Mallison

Traditional content of introductory course in international law presented in context of values and institutions of world community; emphasis upon national states as participants in decision-making processes with consideration also of individuals, international public organizations, political parties, pressure groups, private associations; analysis of range of available sanctions; roles and effects of international agreements under United States Constitution; introduction to the law of war. Complements but does not repeat material in Law 391. (Fall—day and evening; summer 1967)

**259 Labor Law (3)**

Merrifield, Albert, Rothschild

Law governing labor-management relations, organizations and representation of employees, regulation of economic weapons, enforcement of collective bargaining agreements, interunion and intraunion relations. (Fall—day; spring—evening; summer 1967)

**265 Law and Accounting (2)**

S. Cohen, Cibinic, Eichler

Study of fundamental accounting principles with emphasis on corporation accounting; legal and accounting implications of specific items in financial statements of corporations; inventory adjustments; corporate transactions, distributions, capital adjustments. Strongly recommended for students who have had no accounting. (Fall—evening; spring—day)

**270 Legislation (2)**

Nutting

Legislative process and roles of participants in the process; operation of United States Congress and state legislatures, including fact finding, organization, procedure. Statutory interpretation emphasized to provide foundation for more advanced courses. (Spring—day and evening; summer 1967)

**274 Taxation—Federal Estate and Gift (2)**

Kramer, Hambrick

Survey of substantive provisions of federal estate and gift tax laws, including inter vivos transfers, transfers in contemplation of death, joint interests, life insurance proceeds, property subject to powers of appointment, marital deduction and split gifts; tax procedure. (Fall—day and evening)



279 **Taxation—Federal Income (3)**

Hambrick, Weaver

Survey of substantive provisions of federal income tax, including concept of gross income, provisions affecting taxation of family and individual transactions, limitations on allowable deductions, sales and dispositions of property, problems of capital gains taxation, nontaxable exchanges. (Fall—day and evening; summer 1967)

285–86 **Trusts and Estates I–II (3–3)**

Weaver, J. Brown, Kuhn

Noncommercial transfers of wealth at death or during life. *First half*: essential elements and formalities for creation of trusts and execution of wills, revocation and alteration, grounds for contest, limits on property owner's power to control, intestate succession. *Second half*: dispositive provisions, common questions of construction, future interests problems, administration of estates and trusts, charitable trusts. Prerequisite to Law 285: Law 150; to Law 286: Law 285. (Academic year—day and evening; summer 1967—Law 286)

295 **Unfair Trade Practices (3)**

Weston

Unfair trade practices at common law and under statutes; trademarks, trade names; copyright law; misappropriation of ideas; protection of competitors and consumers against false advertising under Federal Trade Commission Act; resale price maintenance under state Fair Trade Acts; state sales-below-cost statutes; Robinson-Patman Price Discrimination Act; miscellaneous business practices. (Fall—day and evening)

302 **Admiralty (2)**

Clingan

Doctrines originating in admiralty courts—prize, maritime liens, salvage, general average, negligence in ship collisions and otherwise, maintenance and care, unseaworthiness; maritime law from legislative origins—personal injury and death remedies, limits on shipowners' liability, regulation of carriage of goods and persons; admiralty jurisdiction and maritime law in the federal system. (Fall—day)

307 **Comparative Law (3)**

Davison

Civil Law System, general introduction to foreign law as exemplified by Roman Law and French and German Civil Codes, comparative study of administration of justice and legal institutions. Delictual and contractual obligations. (Fall—day)

309 **Conflict of Laws (3)**

Dixon, Seidelson

Legal problems arising from occurrences transcending state or national boundaries; jurisdiction; foreign judgments; constitutional influences; theoretical bases of choice of law principles and their application to specific fields, including torts, contracts, property, family law, administration of estates, business associations. (Fall—day and evening; summer 1967)

311 **Copyright Law (2)**

Cary

Historical background; formalities and essentials in securing a copyright; subject matter of copyright; remedies; international aspects of copyright under Berne Union, Universal Copyright Convention, Inter-American Convention; copyright licensing and performing right societies. (Spring—evening)

318 **Creditors' Rights (3)**

Kirkpatrick

Creditors' remedies outside bankruptcy—compositions, agreements, general assignments; bankruptcy proceedings under the federal statute, admin-



istration, discharge, the position and powers of the trustee, preferences; corporate reorganization under Chapter X of the Bankruptcy Act. (Fall—day and evening)

**\*321-22 Current Decisions (2-2)**

Limited to members of the student staff of the *Law Review*. (RP)  
(Academic year—day and evening)

**330 Federal Antitrust Laws (3)**

Weston, Kirkpatrick, D. Green

Sherman and Clayton Acts, related statutes. Price fixing agreements and other types of trade restraints considered under Section 1; monopolizing considered under Section 2 of the Sherman Act. Mergers and tie-in sales; other activities under the Clayton Act. All types of business conduct raising questions under the antitrust laws, including trade association activities, exclusive-dealing arrangements, boycotts, patents and copyrights. (Spring—day and evening; summer 1967)

**335 Jurisprudence (2)**

Mayo, Kramer

Basic jurisprudential concepts; nature of law; development of legal institutions; jurisprudential schools—natural law, analytical, historical, sociological, functional; law and logic; law and justice; the judicial process; legislative, executive, administrative decision making; impact of politics, economics, and scientific advance on legal systems; contemporary trends in jurisprudential thought. (Fall—evening; spring—day)

**337 Taxation—Corporate (2)**

Hambrick

Analytical study of income tax problems in corporate dividends and distributions in redemption of stock; corporate liquidations; reorganizations, mergers, acquisitions; recapitalizations; organization and sales of corporate businesses; collapsible corporations; carry-overs. Prerequisite: Law 279. (Spring—day and evening)

**339 Collective Bargaining and Labor Arbitration (2)**

Merrifield

Collective labor agreement: content, negotiation, administration through grievance procedure and arbitration; problems in settlement of labor disputes. (Spring—day and evening)

**341 Labor Standards and Social Security Legislation (2)**

Doherty

Legal problems arising under federal and state statutes dealing with labor standards and social security. Particular emphasis upon regulation of wages and hours, workmen's compensation, insurance against unemployment and old age. (Fall—evening)

**344 Legal Writing (1 or 2)**

Staff

Preparation of a research paper under the supervision of a member of the Faculty who will determine, prior to registration, whether the work required for the topic selected justifies one or two credits. If elected for one credit this course may be repeated to meet the legal writing requirement for the degree. Approval of the Dean is required prior to registration. (RP) (Fall and spring—as arranged)

**345 Legislative Drafting (2)**

Zinn

Advanced instruction and practice in legislative drafting. (RP)  
evening)

(Fall—

\* The grade CR (credit) or NC (no credit) is given for this course.



**349 Local Government Law (2)**

Nutting, Pock

Decision-making processes in metropolitan and local communities; types and objectives of city, county, special function local government units; intergovernmental relations; original organization and changes; personnel; local lawmaking; responsibility in tort; introduction to community planning. (Fall—day and evening; summer 1967)

**355 Government Contracts (2)**

Nash, Cibinic

Survey of basic law underlying government procurement, basic power and limitations on Federal Government in entering into contracts, administrative and legislative policies governing these contracts, advertised and negotiated procurement procedures, forms of contracts and clauses used. (Fall—day)

**359 Patent Law (3)**

Kayton

Law of patents subsequent to issuance of patent; nature of patent as property and as a legal instrument; validity—novelty, nonobviousness, commercial success; infringement—direct and contributory, doctrine of equivalents and file-wrapper estoppel. Substantive concepts introduced in an order approximating patentee's and infringer's cases in litigation. Designed for students intending to specialize in patent law; knowledge or experience in patent law helpful but not prerequisite. (Fall—evening)

**362 Patent Office Practice (2)**

Kayton

Substantive and procedural law of patents leading to issuance of patent, mainly related to proceedings before U.S. Patent Office. Obtaining and preserving earliest possible patent filing date; continuing applications, res judicata, novelty and nonobviousness requirements; substantive rules of priority of invention and related affidavit practice; nature of claims and formal defects; restriction and double patenting. Designed for students intending to specialize in patent law. Prerequisite: Law 359 or the equivalent in experience. (Spring—evening)

**\*365 Patent Trial and Appellate Practice (2)**

T. Brown

Practice before U.S. Court of Customs and Patent Appeals and federal courts. Credit is not given to students who have credit for Law 385. Prerequisite: Law 359, 362, and forty-two additional hours of Law. Prerequisite or concurrent registration: Law 215 and 240. (Fall and spring—evening)

**\*366 Patent Trial and Appellate Practice (1)**

T. Brown

Prerequisite: Law 365 or 385. (Fall and spring—evening)

**368 Patent Licensing and International and Comparative Patent Law (2)**

Kayton, Federico

Fundamentals of exclusive and nonexclusive patent license contracts, express and implied. Problems of royalty calculations and negotiation. Relationship between licensor, licensee, and third parties. Analysis of licensee estoppel and its current status. Effect of patent invalidity on licensee obligations. Patent misuse and antitrust considerations affecting license validity and patent enforceability—tying arrangements, price restrictions, package licensing, grant-back arrangements. Survey of principal national patent systems. Treaties relating to patents. International Convention for the Protection of Industrial Property (patent and trademark treaty between

\* The grade CR (credit) or NC (no credit) is given for this course.



51 countries); history, analysis, application, administration. Current movements toward harmonization plans for multinational patents. Prerequisite: Law 359, or the equivalent in experience. (Spring—evening)

**372 Forensic Medicine (2)**

Sharpe, Head

Examples drawn from the range of problems arising when the professional interests of lawyers and physicians overlap. Problem contexts include malpractice, personal injury litigation, licensure and discipline, ethics and economics, hospitals and other institutions of practice, and compelled treatment. Open to third-year medical students. (Fall—day and evening)

**376 Restitution (2)**

Pock, Nash

Quasi-contracts, constructive trusts, rescission, and other legal and equitable remedies for restoring property and money which unjustly enrich others at the expense of volunteers, victims of misappropriation, and parties to mistaken contracts. (Fall—evening; spring—day; summer 1967)

**378 Secured Transactions (3)**

J. Brown, Clingan

Suretyship and mortgages: security interests in real and personal property, their creation, transfer, enforcement, extinguishment; law of suretyship, especially in context of accommodation credit and commercial and financial practices. (Spring—day and evening)

**382 Negligence Trial Techniques (2)**

Goldsborough

*(Formerly Selected Problems in the Trial of Tort Cases)*  
Open to undergraduates with 56 hours or more, including Law 161-62, 215, 240, and to graduate students and young lawyers without experience in the trial of a negligence case. Recent developments in the principal areas of negligence law; extension of fundamental concepts of damages and principal aspects of settling negligence case; preparation and trial of negligence case; contemporary liability insurance policy and its impact upon tort litigation; literature of tort law. (RP) (Fall—evening)

**\*385 Trial Practice Court (2)**

Jackson, Edgerton, Herrick, Ryan,  
Beard, Kendrick, Skinker, Clingan, Stevas

Trial of assigned cases, trial tactics and techniques, pre-trial and court room procedures pursuant to Federal Rules. Credit is not given to students who have credit for Law 365. Prerequisite: forty-two semester hours, including Law 215. Prerequisite or concurrent registration: Law 240. (Fall and spring—day and evening)

**\*386 Trial Practice Court (1)**

Jackson, Edgerton, Herrick, Ryan,  
Beard, Kendrick, Skinker, Clingan, Stevas

Prerequisite: Law 385 or 365. (Fall and spring—day and evening)

**391 United Nations Law and World Order (2)**

Mallison, Marks

Introduction to international law through study of law and practice of United Nations Charter; structure and process of decision of United Nations; maintenance of international peace and security—peaceful settlement of disputes and national and collective self-defense; formulation and implementation of human rights. Complements but does not repeat the material in Law 254. (Spring—evening)

\* The grade CR (credit) or NC (no credit) is given for this course.



## ADVANCED COURSES

- 401 **Seminar: Administrative Law (2)** Davison  
Group study of specific problems in administrative law. (RP) (Spring—day)
- 408 **Seminar: Constitutional Law (2)** Dixon  
Group study of contemporary problems in constitutional law; process of constitutional litigation; problems of effectuating constitutional guarantees. (RP) (Spring—day)
- 409 **Seminar: Science and the Legal Process (2)** H. Green  
Reciprocal relationships between law and science; absorption of scientific concepts into substantive law through adjudication, legislation, and rule making; techniques and procedures used in handling, developing, and deciding scientific issues. (Spring—evening)
- 410 **Science Policy Formulation (2)** H. Green  
Current or recent important governmental decisions in the area of science as they affect the interplay of various government and community interests; the role of law as a constraint, vehicle, or implement; the role of lawyers in the decision-making process. (RP) (Fall—evening)
- 411 **Intergovernmental Aspects of Technological Progress (2)** Oppenheimer  
Role of technology in breaking down political barriers and leading to intergovernmental measures to control or advance technological progress within the United States and on an international basis. Specific legal devices and institutions employed in intergovernmental handling of technological problems. (RP) (Not offered 1967–68)
- 412 **Use and Control of Atomic Energy and Space Technology (2)** H. Green  
Problems resulting from revolutionary scientific developments of recent years. Impact of advanced technologies on the law and legal institutions. Laws and regulations relating to atomic energy and space including civilian uses, licensing, security, international, and patent considerations. (RP) (Not offered 1967–68)
- 413 **The Modern Corporation (2)** Manne  
Application of principles of economics to corporate legal problems. Examination of fights for control, shareholder voting, impact of stock market on management, and effects of SEC, tax, and antitrust laws on corporate control. (RP) (Fall—day)
- 414 **Legal Protection against Technological Hazards (2)** Dembling  
The growth and development of law and legal institutions to protect society against the hazards inherent in new technologies with particular emphasis on the progress of reconciling the protection of the public with the desire for rapid progress. (RP) (Spring—evening)
- 415 **Administration of Criminal Justice (2)** Allen  
Consideration and analysis of selected advanced problems in the administration of criminal justice. The subject matter covered will vary from year to year, with concentration in areas of current interest and dynamic



change (e.g., right to counsel, arrest and interrogation, search and seizure, prejudicial publicity, discovery, electronic interception, mental impairment). Emphasis will be placed on the role and professional responsibilities of prosecutor and defense counsel and on developmental trends in the law. (RP) (Fall—day)

**416 Post-conviction Dispositions—Dynamics of the Law of Criminal Corrections (2)**

Barkin

Study of the statutes, practice, problems, and potentials of the alternatives facing a defendant including: mental fitness to proceed to trial, probation, sentencing, parole, correctional institutions, rights of prisoners. (Spring—evening)

**417 Law and Criminology I: Search for the Causes of Criminal Behavior (2)**

Courtless

Role which criminological knowledge of crime causation may play in assisting lawyers to appraise the effectiveness of various alternative social and legal devices in controlling deviant behavior. The search for factors related to criminal behavior will be developed historically, with emphasis on current causal theories developed by various disciplines. Model as well as operational penal codes, sentencing and probation practices, and specialized facilities will be analyzed in terms of their relationship to such causal theories. (RP) (Fall—evening)

**418 Law and Criminology II: Society's Responses to the Criminal Offender (2)**

Courtless

Study of the development and current use of society's three major approaches to the handling of offenders: punitive, mechanical, and correctional. Emphasis on society's changing responses to criminal and delinquent behavior, and research findings concerning effectiveness of these responses. Analysis of treatment strategies to facilitate communication between members of the legal profession and behavior scientists charged with effectuating these strategies. (RP) (Spring—evening)

**420 Seminar: Estate Planning (2)**

Weaver, Speiller

Group study of the effective disposition of wealth, inter vivos and testamentary gifts, conservation for owner's future use, use of insurance, tax and administrative problems, business interests, pension and profit-sharing arrangements. Prerequisite: Law 274. (RP) (Spring—day and evening; summer 1967)

**421 European Common Market (2)**

Ehrenhaft

Analysis of treaty establishing European Economic Community; institutions of EEC and of member states and the internal law of member states as they affect doing business in EEC; series of problems arising out of establishing and operating business with and within EEC. Background in international law and antitrust law desirable. (RP) (Fall—evening)

**423 Natural Resources Law and Policy (2)**

Kratchman

Study of key legal doctrines and their development in the law of water, mining, oil, and gas. Systematic analysis of natural resource problems such as government and private interactions, multiple use and priorities of resources, and security of property rights. Examination of alternatives in resource policy development, and impact on private and public actions. (RP) (Fall—evening)



- 425 **Executive Function (2)** Miller  
Executive branch in constitutional theory; major trends in development of Executive-Administrative function; organization of Executive branch; relationship of Executive to Congress and Judiciary; policy-making procedures within Executive branch including role of Bureau of the Budget in national policy planning; case studies in exercise of Executive power in such functional areas as national defense, race relations, national economy, foreign economic relations; role of law and lawyers in Executive decisional and implemental process. (RP) (Not offered 1967-68)
- 426 **Interdisciplinary Seminar on the Juvenile Court (2)** Ferster  
Lectures and reading materials include sociological, psychological, and psychiatric views on prevention, diagnosis, and treatment in addition to analysis of statutes, court rules, and reported cases pertaining to delinquency, dependency, custody, and child abuse. Emphasis on the role of the lawyer in this court. (RP) (Fall—evening)
- 427 **Economic Planning and the Law (2)** Stark  
Interrelation of law and economics in such subject matter categories and decisional contexts as antitrust laws, economic regulation of industry, fiscal policy planning, government research and development practices, land use planning, and foreign trade and investment. (RP) (Fall—evening)
- 428 **Food and Drug Law (2)** Goodrich, Kaplan, Kleinfeld  
The Federal Food, Drug, and Cosmetic Act and governmental controls thereunder. Both government and industry viewpoints are considered. (Spring—evening)
- 431 **Government Procurement Law (2)** McIntire  
Survey of the law pertaining to government procurement including an analysis of the unique features of government contracting and a discussion of the functions of Congress, the Executive branch, and the Courts in the procurement process. (Fall—evening)
- 432 **Formation of Government Contracts (2)** McIntire  
Detailed coverage of the rules and practices followed in arriving at contracts between the Government and private parties. Comparison in depth of advertised and negotiated procurement and analysis of the techniques used in pricing and arriving at the terms of such contracts. (Spring—evening)
- 433 **Performance of Government Contracts (2)** Nash, Cibinic  
Discussion of the substantive legal problems that most frequently arise during the performance of government contracts. Interpretation of specifications and the most generally used contract clauses, and analysis of the rights of the parties when performance in accordance with the terms of the contract is not obtained. (Spring—evening)
- 434 **Government Contract Claims and Litigation (2)** Nash, Ginsburg  
Analysis of the methods which can be used by the parties to a government contract to obtain legal relief, including detailed coverage of the disputes procedure, actions for breach of contract, and forms of equitable and extraordinary relief. (Fall—evening)



- 435 Seminar: Government Contracts (2)** Nash, Cibinic, Ginsburg  
Research and discussion of selected problem areas. (RP) (Summer 1967)
- 437 Diplomatic and Consular Law and Practice (1)** Mitchell  
Development of diplomatic and consular relations between nations; legal rights, privileges, functions, and immunities of diplomatic and consular personnel; extent of immunity from jurisdiction of foreign government missions and representatives; problems of taxation affecting foreign government missions and personnel. (Not offered 1967-68)
- 438 Seminar: International Commercial Transactions (2)** Ledakis  
Role of lawyer and regulation of his practice, survey of problems of foreign client doing business with United States or its nationals, developments in foreign trade and investment among industrialized countries, special treatment of role of private enterprise and government agency operations in developing nations. (RP) (Fall—day)
- 440 Legal Aspects of International Business Transactions (2)** Nurick, Goekjian  
U.S. law and practice, including current antitrust and tax problems; brief comparison with British and Civil Law systems; international law, foreign contracts, choice of law; currency considerations; effect of SEC laws and regulations; international trade, including GATT and reciprocal trade arrangements; sources of finance, both United States and foreign, private and public, including international organizations; and selected case studies. In addition to the regular lecturers, there will be guest lecturers in their specialties. Prerequisite: Law 254. (Spring—evening)
- 441 Seminar: International Technical and Economic Assistance (2)** Glick  
Programs of technical and economic assistance for development overseas conducted by United States, United Nations, Organization of American States. Special attention to work being done in Latin America. Problems of law, policy, program, and administration. Evaluation of alternate operating techniques and results achieved by these programs. Open also to qualified graduate students in the field of economics, international affairs, and political science. (RP) (Fall—evening)
- 442 Seminar: Labor Law (2)** Merrifield  
Group study of contemporary problems in labor law. (RP) (Spring—day)
- 443 Labor Relations in the Federal Service (2)**  
Joint seminar—law and economics—on labor relations in the federal service. Particular attention to current problems arising from the President's Task Force Report and the Executive Order of January 17, 1962, creating a new system of collective relationships between employee organizations and the Federal Government. (RP) (Not offered 1967-68)
- 445 Negotiation: Concepts and Techniques (2)** Ramundo  
Role of the lawyer and policy maker (client) in private, intragovernmental, and international negotiations; negotiations in private practice and governmental operations; achieving consensus among contentious parties; negotiating techniques, including effective use of the "fallback"; gaming



exercises in the actual conducting of negotiations with practical work in the preparation of claim letters, agency and national positions, and negotiating instructions. (RP) (Spring—evening; summer 1967)

**446 Legal Problems of the Poor (2)** Kuhn

Study of relationships in which the poor have particular need of legal advice and in which there has been burgeoning legislative activity. Emphasis on practical difficulties in landlord-tenant, consumer, welfare, family, and criminal situations. Field work required. Admission by permission of the instructor. (RP) (Spring—day)

**447 Labor Unions and Their Members (2)** Bartosic

An intensive study of the legal relations between unions and their members with special emphasis on the right to fair representation, the right to union membership, compulsory union membership, the imposition of discipline upon union members, reporting requirements, the conduct of internal union elections, the fiduciary duties of union officers, the imposition of trusteeships, the regulation of racketeering, and political action of unions. (Summer 1967)

**449 Law of the Near East (2)** Liebesny

Law of the Arab countries, including basic principles of Islamic law, analysis of the present day codes, and investigation of the Western influences on laws of Arab countries. (Fall—evening)

**452 Seminar: Law and Psychiatry (2)** Allen, Ferster

This seminar is designed (1) to expose the lawyer to some of the constructs of dynamic psychiatry dealing with human personality and behavior, and to relate them to problems encountered in legal practice; (2) to provide information—both psychiatric and legal—bearing upon such topics as mental illness and tort liability ("traumatic neurosis," malpractice, commission of torts by mentally ill persons); hospitalization of the mentally ill and mentally retarded; guardianship; ad hoc determinations of incompetency (testamentary, contractual, and donative capacity; capacity to marry, have custody of children; mental illness as a ground for divorce; eugenic sterilization); mental illness and the criminal law (psychiatric evaluations in criminal cases, determinations of competency to stand trial, criminal responsibility); and (3) to examine the role of psychiatry in legal settings, including the effective use of the psychiatrist and psychologist as expert witness. (RP) (Spring—evening)

**454 Legal Aspects of American Foreign Relations (2)** Miller

Legal and policy questions involved in the conduct of American foreign relations. Emphasis upon participation in such multinational organizations as the International Labor Organization, the Organization of American States, the Organization for Economic Cooperation and Development, and the North Atlantic Treaty Organization. Some attention to export controls, international measures for arms control, the American constitutional structure for the conduct of foreign affairs, and the role of law in foreign relations. Prerequisite: Law 110. (RP) (Not offered 1967-68)

**455 Legal Regulation of International Coercion (2)** Mallison

Process of legal decision in war and when expectations of violence are high—contemporary international law of war and coercive measures short of war such as limited naval blockade; legal aspects of modern methods of coercion—economic, political, psychological, and military; limited war



and modes of preventing "escalation" to total war; regulation of hostilities; problems concerning atomic, bacteriological, and chemical weapons. (RP) (Fall—evening)

**456 International Law of Air and Space (2)**

Dembling

Study of the development of international law relating to the use of air space and outer space; the role of various intergovernmental and nongovernmental international organizations; consideration of special problems of liability resulting from space activities, space technology and arms control, and pollution and contamination of outer space. (RP) (Fall—evening)

**457 International Law of the Sea (2)**

Clingan

International and domestic law affecting the allocation of authority over and the use of ocean areas. Problems concerning internal waters, territorial seas, the continental shelf, contiguous zones, and high seas; the impact of advances in ocean science technology on ocean resources; freedom of the sea; maritime safety; problems of war; and the Geneva conventions of 1958. An end-of-course examination is given, but a special research project will be considered as a substitute. (Spring—evening)

**463 Public Policy and Mass Media (2)**

Cohn

Institutional structure of mass media and their interrelationships; the psychological aspects of communications; the continuing adjustments among public interests goals, the economic system, and technological developments; influence of and controls exercised by government, other institutions, and private groups; conflict between freedom of speech and of the press and other major community interests; the media's relationships to the civil rights movement; open to nonlegal graduates and graduate students with permission of the instructor. (RP) (Spring—evening)

**464 Selected Problems in the Regulation of Industry (2)**

Spritzer

Nature and extent of regulation imposed on selected industries with particular attention to producers and carriers of natural gas. Consideration of objectives of public control, division of authority between federal and state agencies, legal and economic approaches to rate-making, service and allocation of resources, techniques adopted by the Federal Power Commission in regulation of conventional utilities (pipelines) and in fashioning a program for control of sales by producers of gas. (RP) (Spring—evening)

**466 Securities Regulation (2)**

Manne, H. Green

State and federal laws governing offering and distribution of securities to the public by corporate issuers and others, regulation of securities markets, rights and liabilities of purchasers under such statutes. Emphasis on statutes administered by Securities and Exchange Commission. (Fall—day; summer 1967)

**467 Regulation of Securities Markets (2)**

Rotberg

Operation of over-the-counter and exchange markets, including competitive and monopolistic practices in each market; relationship of antitrust laws and securities regulations to concept of a free and open market place; role of regional exchanges and third market in providing competitive element in market; advantages and disadvantages of a fragmented market; minimum fee structure, rebates and their effect on merchandising of securities and financial soundness of industry; use and availability of economic data



in evaluating performance of market place. The seminar will examine matters directly of interest to graduate law students, lawyers, economists, and political scientists. (Spring—evening)

**468 Advanced Topics in Patent Law (2)**

Harris

Licensing and protection of industrial property; uses and abuses of patents; governmental regulation; protection abroad; role of patents in business; economic and social functions of patents, trademarks, and copyrights. Prerequisite: Law 359. (RP) (Spring—evening)

**469 Research in Patent, Trademark, and Copyright Law (2)**

Harris

Prerequisite: Law 468, 492, and related courses; and a *B* average. Request in writing, with proposed outline of topic of research, must be submitted to the Dean at least one month prior to registration day. Work must be completed within the semester and paper submitted not later than last day of classes. Graduate students may repeat this course once for credit with the approval of the Dean. (RP) (Fall and spring—as arranged)

**471 Research in Public Law (2)**

Staff

Registration limited to students with at least a *B* average who have had a seminar or comparable course in field of proposed research. Request in writing, with proposed outline of topic of research, must be submitted to the Dean at least one month prior to registration day. Work must be completed within the semester and paper submitted not later than last day of classes. Students may repeat this course once for credit with the approval of the Dean. (RP) (Fall and spring—as arranged)

**473 Soviet Law (2)**

Ramundo

Concept of "socialist legality"; legal relationship of individual to state and other participants in Soviet society; role of Party in Soviet legal system; Soviet philosophy of law; state (constitutional) law; Soviet federalism, governmental apparatus, rights and obligations of citizenship; criminal law; property law; labor law; selected topics in civil law and procedure; international law. (Fall—evening)

**474 Chinese Law (2)**

Hsia

Emphasis on the legal system of Communist China; analysis of the constitutional law of the People's Republic of China including general principles, state structure, and rights and duties of citizens; a brief survey of the administration of justice—courts, procuratorates, and lawyers; marriage law; land law; counterrevolutionary act and other criminal statutes; principles of civil law; communist Chinese concept of international law. (Spring—evening)

**478 Seminar: Tax Practice and Procedure (2)**

Elliott, Klayman

Review of the major areas of tax practice including organization of the Internal Revenue Service, legislation, administrative regulations, tax planning, tax rulings, tax audit, settlement procedures, claims for refund, tax collection processes, criminal tax practice, and ethical problems in tax practice. Preparation of various documents is required. Prerequisite: Law 279. (RP) (Fall—evening)

**479 Seminar: Federal Tax Litigation (2)**

Treusch

Choice of forum. Conduct of civil tax cases: trial practice in the Tax Court, the District Courts, and the Court of Claims; appeal practice in the Courts of Appeals and on certiorari to the Supreme Court; analysis and



drafting of pleadings, motions, and briefs; oral argument; settlements and stipulations of fact. Comparative responsibilities and procedures of IRS and of Justice for litigation control. Prerequisite: Law 478. (RP) (Spring—evening)

#### 480 Taxation—Oil and Gas (2)

Hambrick

Application of federal income tax to producing segment of oil and gas industry. Classification of interests; treatment of exploration and development expenditures. Depletion allowance and concept of "economic interests." Sales and "ABC" transactions. Organization problems. Prerequisite: Law 279. (Not offered 1967-68)

#### 481 Taxation—State and Local (2)

Taxation by state and local governments: property taxation problems, sales and use taxes, income taxation. Limitations on taxation of interstate commerce. Prerequisite: Law 279. (Fall—evening)

#### 482 Taxation—Partnerships and Subchapter S (2)

Income tax problems of partnerships and tax-option corporations (Subchapters K and S of the Internal Revenue Code of 1954). Prerequisite: Law 279. (Spring—evening)

#### 483 Taxation—Exempt Organizations (2)

Treusch

Tax exempt organizations—policy and practice. Preferred tax treatment of selected organizations and of gifts to them. Statute and regulations vs. actual IRS practice; legislative origins, judicial interpretations, and policy considerations. Tests of qualification, disqualification, and limited tax preference. Mechanics of securing and retaining exemptions, qualified exemption, unrelated business income vs. investment income. Denial or loss of exemption; tax treatment of nonexempt, nonprofit organizations. Judicial and legislative treatment of losses of tax exempt status. Prerequisite: Law 279. (Fall—evening)

#### 484 Taxation—Special Corporation Problems (2)

Advanced problems in the taxation of corporations. Prerequisite: Law 337. (Spring—evening)

#### 485 Seminar: Special Problems of Tax Policy (2)

Barlow and Staff

(Formerly Seminar: Selected Topics in Taxation)

Intensive study of selected aspects of the tax structure with primary attention given to the federal income tax. Problem areas are reviewed primarily from the standpoint of tax policy, including legal, economic, social, and practical considerations. Alternative solutions, including current legislative proposals, are examined. Prerequisite: Law 279, 337. (RP) (Fall—evening)

#### 490 Income Taxation of Foreign Business and Investment (2)

Hambrick

The provisions and policies of the Federal Income Tax law applicable to foreign income, including considerations affecting the choice of methods of engaging in foreign business and investment, treatment of controlled foreign corporations, allocation of income in foreign commerce, credit for foreign taxes, principles and trends of U.S. tax treaties. (Spring—evening)



- 491 **The Civil Aeronautics Board and the Administrative Process** (2) Park  
Study of the Civil Aeronautics Board—its structure, limitations, potentials, and achievements; analysis of the dual responsibility for regulation and promotion; relation to market structure, conduct, and prospects of the domestic air transport industry. (RP) (Spring—day)
- 492 **Seminar: Trade Regulation** (2) Weston  
Group study of current problems relating to unfair trade practices and federal antitrust laws. (RP) (Spring—evening)
- 493 **Seminar: Regulation of Transportation I** (2) Hill  
History of development of modes of transportation in the U.S.; economic problems and growth of regulatory legislation and philosophy; the Congressional power to regulate; the scope of federal regulation; agency administration, enforcement, and procedure; introduction to principles of certification and rate making. (Fall—evening)
- 494 **Seminar: Regulation of Transportation II** (2) Hill  
Principles of certification of rail, motor, water, and air carriers; elements and principles of rate making; comparison of problems, procedures, and regulatory philosophies of the various regulatory agencies. (Spring—evening)
- 495 **Land Use Planning** (2) Nutting  
Selected problems in urban redevelopment and housing, with particular emphasis on programs under current federal and state legislation. (RP) (Spring—day)
- 496 **Antitrust Problems in Regulated Industries** (2) Cox  
Consideration of the problems of competition in regulated industries, the responsibility of regulatory agencies in this field, and the application and impact of the antitrust laws to this area. Some emphasis on problems of proving complex economic and technological facts. (RP) (Fall—evening)
- 497 **Public Law of Metropolitan Affairs** (2)  
This seminar will consider a range of legal and policy problems arising with the rapid growth of urban society: intergovernmental relations including the divisions among federal, state, and local units with respect to such matters as fiscal authority; federal grants to states and localities; interstate compacts and authorities; air and water pollution control. (RP) (Not offered 1967-68)
- 499 **Thesis** (4)  
(Fall and spring—as arranged)





## **SPECIAL PROGRAMS IN RESEARCH AND INSTRUCTION**

### **GOVERNMENT CONTRACTS PROGRAM**

*Director* John Cibinic, Jr.

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A COMPREHENSIVE GOVERNMENT CONTRACTS PROGRAM provides continuing instruction for industry and government personnel in this field and a program of courses leading to the Master of Laws degree in Government Procurement Law. The program includes (1) short seminars; (2) two-week courses in advanced problems in the field; (3) an annual institute treating a problem of contemporary importance; (4) an annual conference in a major area; (5) compilation of materials for use in current courses; (6) publication of a series of monographs treating special problems in the field; and (7) special research projects.

### **COMPUTERS-IN-LAW INSTITUTE**

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The Computers-in-Law Institute is coping with the problems posed by the advent of computers in the practice and theory of law. Projects are underway for the purpose of advancing the state of knowledge and pedagogical techniques connected with the law-computer interface. Major areas of current activity and interest include computerized legal information retrieval systems, automatic composition of legal publications, systems studies oriented toward preserving the privacy of the individual in connection with large computerized data centers, computerization of land records and mechanization of routine court administration, and the application of computer techniques to a generalized reapportionment procedure. Other areas of interest include the impact of the computer on taxes and telecommunications. Current educational programs include the annual "Computers and Tax Conference."



### THE INSTITUTE OF LAW, PSYCHIATRY, AND CRIMINOLOGY

Director Richard C. Allen  
Co-director Leon Yochelson

The Institute of Law, Psychiatry, and Criminology draws upon the insights and techniques of the behavioral sciences in areas of mutual concern to law and its sister disciplines, with special emphasis in the fields of forensic psychiatry and criminology. Current research programs are "The Mental Competency Study," and "The Mentally Retarded and the Law," supported by the National Institute of Mental Health.

### LAW, SCIENCE, AND TECHNOLOGY PROGRAM

Director Harold P. Green

The Law, Science, and Technology Program deals with the reciprocal relationships between law and science, providing courses, seminars, research studies, and publications to equip the legal profession to deal more effectively with the social, economic, political, and legal consequences of the nation's present massive commitment to scientific progress.

### THE PATENT, TRADEMARK, AND COPYRIGHT RESEARCH INSTITUTE

Director Louis J. Harris

The Patent, Trademark, and Copyright Research Institute is engaged in gathering and disseminating knowledge regarding the principles, facts, and practical operations of the patent, trademark, copyright, and related systems of laws of the United States and other countries. The Institute journal, *Idea*, is published five times yearly.





## THE GEORGE WASHINGTON LAW ASSOCIATION

THE GEORGE WASHINGTON LAW ASSOCIATION was founded in 1912 and has been affiliated with the General Alumni Association since 1926. Its purposes as stated in the constitution are to promote high standards of legal education, to keep the alumni of the school in close touch with one another, especially with members of their own classes, to gather and publish at intervals information as to the whereabouts and activities of these alumni, and to further the interests of the school.

Eligible members are those who have matriculated in the school or National University and have left in good standing, and any member or former member of the faculty of the school. Active members are those eligible members who are current contributors to the Law Annual Support program of the University and life members of the George Washington Law Association.

The Association plans publication periodically of the Law Alumni Directory. Law Alumni are urged to keep the Alumni Office informed of their whereabouts so that directory information can be kept up to date.

The Law Alumni Office is in Bacon Hall, 2000 H Street, N.W., Washington, D.C. 20006.

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Michael P. Bentzen, LL.B. 1964; Union Trust Building, Washington, D.C. 20005



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- Betty Ann Thompson, A.B. 1946, LL.B. 1948; 2045 15th Street North, Arlington, Va. 22201
- William C. Thornton, LL.B. 1961; 227 Hill Street, Reno, Nev. 89501
- Kirby L. Turnage, Jr., J.D. 1964; 434 Trust Company of Georgia Building, Atlanta, Ga. 30303
- James O. Wright, LL.B. 1938; P.O. Box 1966, Detroit, Mich. 48235
- Samuel J. L'Hommedieu, Jr., ex officio, LL.B. 1951, LL.M. 1952; 1627 K Street, N.W., Washington, D.C. 20006



## THE UNIVERSITY

### HISTORY AND ORGANIZATION

THE GEORGE WASHINGTON UNIVERSITY had its beginning in 1821 as The Columbian College in the District of Columbia. The name of the institution was changed in 1873 to Columbian University and in 1904 to The George Washington University. The debt of the University to George Washington whose name it bears is an intangible one.

George Washington, as President and as private citizen, had urgently insisted upon the establishment of a National University in the Federal City. There he hoped that, while being instructed in the arts and sciences, students from all parts of the country would acquire the habits of good citizenship, throwing off local prejudices and gaining at first hand a knowledge of the practice, as well as the theory, of republican government. To further the materialization of his hopes, Washington left a bequest of fifty shares of The Potomac Company towards the endowment of a University to be established within the limits of the District of Columbia, under the auspices of the General Government, if that government should incline to extend a fostering hand towards it." The Congress never extended "a fostering hand." The Potomac Company passed out of existence, and Washington's bequest became worthless.

Fully conscious of Washington's hopes, but motivated primarily by a great missionary urge and the need for a learned clergy, a group of dedicated ministers and laymen sponsored a movement for the establishment of a college in the District of Columbia. Inspired largely by the zeal and energy of the Reverend Luther Rice, they raised funds for the purchase of a site and petitioned Congress for a charter. After much delay and amendment, Congress granted a charter which was approved by President Monroe on February 9, 1821. To safeguard the College's nonsectarian character it provided "That persons of every religious denomination shall be capable of being elected Trustees; nor shall any person, either as President, Professor, Tutor or pupil, be refused admittance into said College, or denied any of the privileges, immunities, or advantages therefore, for or on account of his sentiments in matters of religion."

During the entire time when the institution was known as Columbian College, its activities were centered on College Hill, a tract of forty-six and a half acres between the present Fourteenth and Fifteenth Streets extending north from Florida Avenue to somewhat beyond Columbia Road. The Medical School was located downtown. For the better part of the Columbian University period, the



buildings of the University were situated along H Street between Thirteenth and Fifteenth Streets. The Medical School group still remains there.

During the last half century the University's present plant has been developed in that section of the old First Ward familiarly known as "Foggy Bottom," between Nineteenth and Twenty-fourth Streets, south of Pennsylvania Avenue. The area is not without its reminders of historic interest to the University. President Monroe, who signed the Charter, lived at 2017 Eye Street. The first President of the Board of Trustees, the Reverend Obadiah B. Brown, was for fifty years the pastor of a church at Nineteenth and Eye Streets, and Washington selected Twenty-third and E Streets as the site of the National University he had hoped to see established.

The University as it is now organized consists of Columbian College of Arts and Sciences (undergraduate); the Graduate School of Arts and Sciences; the professional schools, which include the National Law Center and the schools of Medicine, Engineering and Applied Science, Education, Government and Business Administration, Public and International Affairs; the College of General Studies; the Division of University Students; and the Summer Sessions.

The George Washington University is privately endowed and is governed by a self-perpetuating Board of Trustees of which the president is an ex officio member.

#### ACADEMIC STATUS

The George Washington University is accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools. The University is on the approved list of the American Association of University Women and is a member of the College Entrance Examination Board.

#### LOCATION

The George Washington University is in downtown Washington, four blocks west of the White House. Within a few blocks are the buildings housing the offices of many of the departments of the Government, including the Department of State, the Department of the Treasury, the Department of Justice, the Department of the Interior, the Department of Agriculture, the Department of Commerce, and the Department of Labor. Also readily accessible are the Capitol, the Library of Congress, the National Archives, and the Supreme Court and other federal courts.

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## THE NATIONAL LAW CENTER

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A.B. 1920, Johns Hopkins University; LL.B. 1923, S.J.D. 1926, Harvard University

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B.S. 1920, U. S. Naval Academy; LL.B. 1935, Sc.D. 1961, The George Washington University; LL.D. 1946; Muhlenberg College; LL.D. 1958, Dickinson College

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A.B. 1922, LL.B. 1924, The George Washington University; J.D. 1925, Yale University

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Ph.B. 1916, University of Chicago; LL.B. 1924, Harvard University

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LL.B. 1906, The George Washington University

#### ACTIVE

Jeffrey Marshall Albert, *Associate Professor of Law*

A.B. 1956, Princeton University; LL.B. 1959, Harvard University; LL.M. 1962, New York University

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A.B. 1940, University of Scranton; LL.B. 1943, Dickinson School of Law
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A.B. 1929, Alma College; LL.B. 1935, The George Washington University; LL.D. 1935, Norwich University
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A.B. 1955, Tufts University; LL.B. 1958, Yale University; LL.M. 1960, The George Washington University
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LL.B. 1939, Georgetown University; Judge, District of Columbia Court of General Sessions
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- Weaver White Dunnan, *Professorial Lecturer in Law*  
A.B. 1947, LL.B. 1949, Harvard University



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B.S. 1923, Case Institute of Technology; A.M. 1925, The George Washington University; LL.B. 1932, American University
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B.S. 1951, University of Wisconsin; LL.B. 1954, Northwestern University
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- Louis James Harris, *Professor of Law; Director, Patent, Trademark, and Copyright Research Institute*  
A.B. 1932, Cornell University; LL.B. 1939, S.J.D. 1942, Brooklyn Law School; LL.M. 1948, The George Washington University
- Murdock Head, *Professorial Lecturer in Forensic Medicine*  
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A.B. 1929, Williams College; LL.B. 1933, LL.M. 1936, The George Washington University
- James Daniel Hill, *Associate Professorial Lecturer in Law*  
A.B. 1936, J.D. 1938, University of Iowa
- Tao-tai Hsia, *Professorial Lecturer in Law*  
LL.B. 1945, National Cheng-chih University, China; LL.M. 1950, J.S.D. 1952, Yale University
- John Wingfield Jackson, *Adjunct Professor of Law*  
B.S. 1928, University of Pennsylvania; LL.B. 1932, The George Washington University
- Alan Hirsh Kaplan, *Associate Professorial Lecturer in Law*  
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- Irving Kayton, *Professor of Law; Co-director, Computers-in-Law Institute*  
A.B. 1951, Cornell University; LL.B. 1957, New York University; LL.M. 1964, Columbia University
- John Alexander Kendrick, *Clerk of the Trial Practice Court*  
A.B. 1942, LL.B. 1943, The George Washington University



- William Wallace Kirkpatrick, *Professor of Law; Associate Dean of the National Law Center*  
A.B. 1934, LL.B. 1938, Harvard University
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B.S. 1951, LL.B. 1954, West Virginia University
- Vincent Kleinfeld, *Associate Professorial Lecturer in Law*  
LL.B. 1929, Columbia University
- Robert Kramer, *Professor of Law; Dean of the National Law Center*  
A.B. 1935, LL.B. 1938, Harvard University
- Jack Kratchman, *Assistant Professorial Lecturer in Law*  
B.S. 1948, City College, New York; M.S. 1952, New York University; LL.B. 1964, The George Washington University
- Roger Stroock Kuhn, *Associate Professor of Law*  
A.B. 1948, Harvard University; LL.B. 1951, Columbia University
- Gust Angelo Ledakis, *Professor of Law*  
B.B.A. 1953, LL.B. 1955, University of Washington; S.J.D. 1958, University of Michigan
- Herbert Joseph Liebesny, *Professorial Lecturer in Law*  
J.D. 1935, University of Vienna, Austria
- \*William Thomas Mallison, Jr., *Professor of Law*  
A.B. 1940, University of Washington; LL.B. 1948, Vanderbilt University
- Henry Girard Manne, *Professor of Law*  
A.B. 1950, Vanderbilt University; J.D. 1952, University of Chicago; LL.M. 1953, J.S.D. 1966, Yale University
- Lee Robert Marks, *Assistant Professorial Lecturer in Law*  
A.B. 1957, University of Michigan; LL.B. 1960, Harvard University
- Louis Harkey Mayo, *Professor of Law; Vice President for Advanced Policy Studies*  
B.S. 1940, U. S. Naval Academy; LL.B. 1949, University of Virginia; J.S.D. 1953, Yale University
- John Albert McIntire, *Professorial Lecturer in Law*  
A.B. 1929, LL.D. 1954, Wittenberg College; LL.B. 1931, University of Cincinnati
- Leroy Sorenson Merrifield, *Professor of Law*  
A.B. 1938, LL.B. 1941, University of Minnesota; M.P.A. 1942, S.J.D. 1956, Harvard University
- †Arthur Selwyn Miller, *Professor of Law*  
A.B. 1938, Willamette University; LL.B. 1949, Stanford University; J.S.D. 1959, Yale University
- Milton Mitchell, *Assistant Professorial Lecturer in Law*  
LL.B. 1942, The George Washington University
- Ralph Clarke Nash, Jr., *Professor of Law; Associate Dean of the National Law Center, for Graduate Studies, Research, and Projects*  
A.B. 1953, Princeton University; J.D. 1957, The George Washington University
- Lester Nurick, *Professorial Lecturer in Law*  
B.S.S. 1934, City University of New York; LL.B. 1937, Brooklyn Law School
- Charles Bernard Nutting, *Professor of Law*  
A.B. 1927, J.D. 1930, University of Iowa; LL.M. 1932, S.J.D. 1933, Harvard University; LL.D. 1957, University of Pittsburgh; Litt.D. 1957, Geneva College; L.H.D. 1957, Seton Hill College; LL.D. 1960, Dickinson College of Law
- Jack Carl Oppenheimer, *Associate Professorial Lecturer in Law*  
A.B. 1941, University of Wisconsin; LL.B. 1943, Yale University
- Robert Eugene Park, *Associate Professor of Law*  
B.S. 1952, A.B. 1957, LL.B. 1961, University of Florida; LL.M. 1965, Yale University

\* On sabbatical leave spring semester 1967-68.  
† On sabbatical leave fall semester 1967-68.



- Max Pock, *Associate Professor of Law*  
J.D. 1958, University of Iowa; S.J.D. 1962, University of Michigan
- Edward Andrew Potts, *Professor of Law; Associate Dean of the National Law Center*  
A.B. 1949, University of Michigan; LL.B. 1952, The George Washington University
- Bernard Ramundo, *Associate Professorial Lecturer in Law*  
A.B. 1947, City University of New York; LL.B. 1949, A.M. 1957, Columbia University; Ph.D. 1966, American University
- David Robinson, Jr., *Associate Professor of Law*  
A.B. 1950, Reed College; LL.B. 1956, Columbia University; LL.M. 1965, Harvard University
- Eugene Harvey Rotberg, *Associate Professorial Lecturer in Law*  
B.S. 1951, Temple University; LL.B. 1954, University of Pennsylvania.
- Donald Phillip Rothschild, *Associate Professor of Law*  
A.B. 1950, University of Michigan; J.D. 1965, University of Toledo; LL.M. 1966, Harvard University
- Joseph Michael Francis Ryan, Jr., *Professorial Lecturer in Law*  
A.B. 1943, St. Joseph's College; LL.B. 1950, LL.M. 1952, Georgetown University; Judge, District of Columbia Court of General Sessions
- Lewis Aaron Schiller, *Associate Professor of Law*  
A.B. 1950, LL.B. 1952, University of Texas; A.M. 1958, Fletcher School of Law and Diplomacy
- David Earl Seidelson, *Professor of Law*  
A.B. 1951, LL.B. 1956, University of Pittsburgh
- \*David James Sharpe, *Professor of Law*  
A.B. 1950, University of North Carolina; LL.B. 1955, Harvard University
- George Walter Shelhorse, *Associate Professorial Lecturer in Law*  
LL.B. 1951, The George Washington University
- Dudley Graham Skinker, *Associate Clerk of the Trial Practice Court*  
LL.B. 1940, The George Washington University
- William Mark Speiller, *Associate Professorial Lecturer in Law*  
B.S. 1950, LL.B. 1952, Syracuse University; LL.M. 1953, Harvard University
- Ralph Simon Spritzer, *Professorial Lecturer in Law*  
B.S. 1937, LL.B. 1940, Columbia University
- John Regan Stark, *Assistant Professorial Lecturer in Law*  
A.B. 1938, Cornell University; M.P.A. 1947, New York University; J.D. 1952, The George Washington University
- \*James Edward Starrs, *Professor of Law*  
A.B., LL.B. 1958, St. John's University, New York; LL.M. 1959, New York University
- Alexander Louis Stevas, *Assistant Professorial Lecturer in Law*  
A.B. 1949, LL.B. 1951, The George Washington University
- Paul Ellsworth Treusch, *Professorial Lecturer in Law*  
Ph.B. 1932, J.D. 1935, University of Chicago
- David Benson Weaver, *Professor of Law*  
A.B. 1943, Ohio Wesleyan University; LL.B. 1948, Western Reserve University
- Glen Earl Weston, *Professor of Law*  
B.S. 1943, University of Maryland; LL.B. 1948, The George Washington University
- Charles James Zinn, *Professorial Lecturer in Law*  
A.B. 1927, LL.B. 1930, Fordham University; LL.M. 1951, S.J.D. 1954, Georgetown University

## FELLOWS†

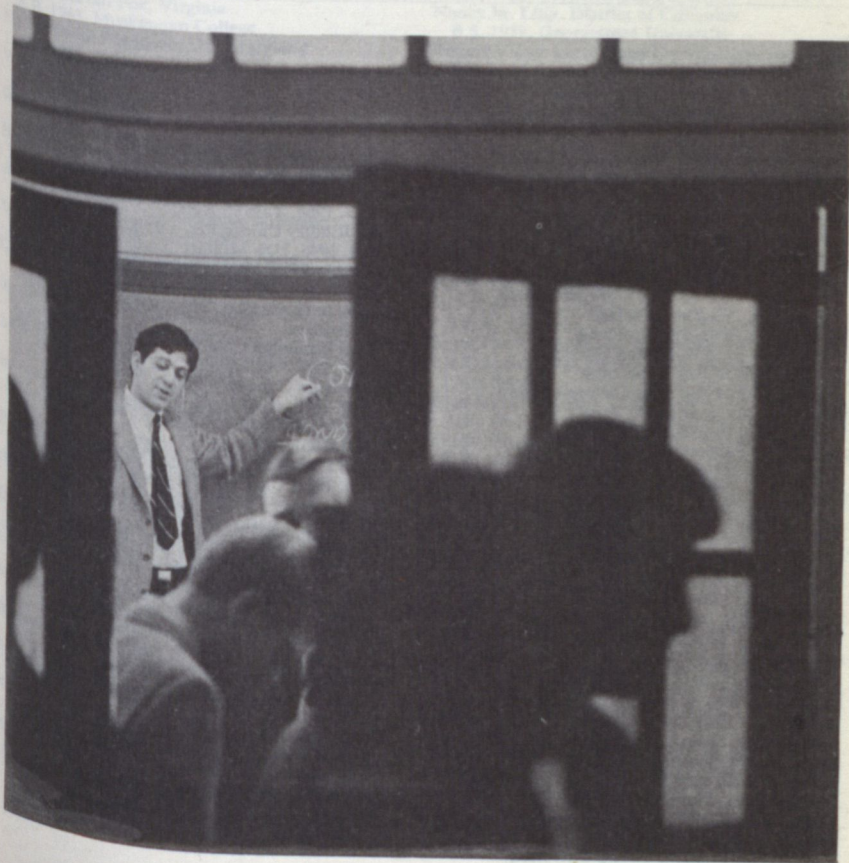
- Fred Warren Bennett, *Teaching Fellow in Law*  
A.B. 1964, American University; LL.B. 1966, The George Washington University

\* On sabbatical leave spring semester 1967-68.

† For the academic year 1966-67.



- Allen Berk, *Fellow in Law and Empirical Research*  
A.B. 1962, City University of New York; LL.B. 1965, The George Washington University
- Gary Joel Edles, *Teaching Fellow in Law*  
A.B. 1962, Queens College, New York; LL.B. 1965, New York University; LL.M. 1966, The George Washington University
- Jesse Ernest Lasken, *Graduate Fellow in Government Procurement Law*  
A.B. 1963, J.D. 1966, University of Michigan
- Philip Robert LeVine, *Fellow in Law and Empirical Research*  
A.B. 1962, LL.B. 1965, Boston University
- George Francis McGunnigle, Jr., *Teaching Fellow in Law*  
A.B. 1963, Boston College; LL.B. 1966, Georgetown University
- Benjamin McKeever, *Fellow in Law and Empirical Research*  
A.B. 1958, Harvard University; LL.B. 1962, Boston University
- Melvyn Irwin Monzack, *Fellow in Law and Empirical Research*  
B.S. 1962, University of Rhode Island; LL.B. 1965, The George Washington University
- Daniel Robert O'Neill, *Teaching Fellow in Law*  
A.B. 1961, College of the Holy Cross; J.D. 1966, St. Louis University
- Joseph Sturdyvin Sexton, *Teaching Fellow in Law*  
A.B. 1962, LL.B. 1965, Harvard University; LL.M. 1966, The George Washington University
- William Clarence Wolff III, *Graduate Fellow in Government Procurement Law*  
B.E.E. 1948, Rensselaer Polytechnic Institute; M.B.A. 1949, University of Pennsylvania; LL.B. 1957, Seton Hall University





## THE NATIONAL LAW CENTER RECORD 1966-67

### Degrees Conferred

#### ANNUAL COMMENCEMENT, JUNE 5, 1966

##### BACHELOR OF LAWS

Student Marshal: Robert James Routh

- |   |   |
|---|---|
| Harry Berkley Allen, District of Columbia<br>A.B. 1939, A.M. 1942, University of California, Los Angeles                | Robert Louis Brown, New York<br>A.B. 1963, Brown University                                 |
| Raymond Freddie Altman, Maryland<br>A.B. 1963, University of Maryland   | John Elliott Bunce, Virginia<br>A.B. 1960, Yale University                                  |
| Richard Alan Anderson, Maryland<br>B.S. in Ch.E. 1957, University of Iowa   | John Bradley Chickering, Virginia<br>B.S. 1945, U.S. Military Academy                       |
| Benjamin Joseph Andrews, Jr., New York<br>A.B. 1963, Allegheny College  | M.S. in Engr. 1950, Purdue University   |
| Charles S. Asmar, Jr., Maryland<br>B.S. in A.E. 1958, Boston University   | Jack Victor Cohen, Maryland<br>A.B. in Govt. 1963, The George Washington University         |
| Burton Howard Baker, Virginia<br>B.S. in E.E. 1950, State College of Iowa   | Daniel Randolph Cole, Jr., District of Columbia<br>A.B. 1963, Washington and Lee University |
| Robert B. Baker, Jr., New York<br>A.B. 1959, Princeton University   | John Hayes Conner, Virginia<br>A.B. 1963, Gettysburg College                                |
| John Barry Beemer, Pennsylvania<br>B.S. 1963, University of Scranton  | Abigail Jane Cooley, Virginia<br>A.B. 1961, Wellesley College                               |
| Rober B. Beitler, Maryland<br>A.B. 1962, Brigham Young University   | Gafford Thomas Cooper, Jr., South Carolina<br>B.S. 1963, Clemson University                 |
| Fred Warren Bennett, Maryland<br>A.B. 1964, American University   | John Kennedy Cooper, New Jersey<br>A.B. 1963, Lafayette College                             |
| Morton Berg, Maryland<br>A.B. in Govt. 1959, The George Washington University   | Meredith Pullen Crawford, Jr., Maryland<br>A.B. 1960, Vanderbilt University                 |
| Harry A. Black, Vermont<br>A.B. 1961, Allegheny College   | Fred H. Daly, Connecticut<br>B.S. 1960, Fordham University                                  |
| Daniel Glenn Blackhurst, Virginia<br>B.S. in M.E. 1960, B.S. in E.A. 1961,<br>Michigan College of Mining and Technology | M.B.A. 1961, New York University  |
| Arthur Hart Blitz, New Jersey<br>A.B. 1963, University of Virginia  | Kelley Richard Davis, California<br>A.B. 1962, University of Notre Dame                     |
| Theodore Blumenstock, Maryland<br>B.S. in M.E. 1958, University of Wisconsin  | Anthony John Diamond, Delaware<br>A.B. in Govt. 1963, The George Washington University      |
| John D. Boos, Maryland<br>B.S. in M.E. 1962, Duke University  | Craig Tipton Distellhorst, Florida<br>B.S. in Comm. 1963, Washington and Lee University     |
| Patrick G. Bowen, California<br>B.S. 1963, Brigham Young University   | Robert Frederick Dropkin, New York<br>B.S. in M.E. 1963, Drexel Institute of Technology     |



- Jacques Matagne Dulin, Virginia  
B.S. 1957, University of Chicago
- Edward Ernest Dyson, Virginia  
B.B.A. 1962, The George Washington University
- Arthur C. Elgin, Jr., Maryland  
B.S.E. 1960, Princeton University
- George Llewellyn Eynon, Jr., Pennsylvania  
A.B. 1963, Colgate University
- Thomas Walsh Farquhar, District of Columbia  
A.B. 1960, A.M. 1964, The George Washington University
- Samuel Michael Feder, Maryland  
A.B. 1961, Yeshiva University
- Arthur Lee Feldman, New Jersey  
A.B. 1963, Tulane University of Louisiana
- Jon Alden Feldman, New Jersey  
A.B. 1962, The George Washington University
- Frederick Alan Fielder, Jr., Virginia  
B.S. in M.E. 1963, Duke University
- Winston Jeffrey Fillmore, Virginia  
B.S. 1963, University of Utah
- Alfred Peter Foote, New York  
A.B. 1963, Yale University
- Michael Footer, Maryland  
B.S. in B.A. 1963, American University
- Renn Cordell Fowler, Maryland  
A.B. 1963, University of Maryland
- Samuel Leonard Fox, District of Columbia  
B.S. 1963, University of Maryland
- Thomas Clevan Fox, Virginia  
A.B. 1963, Muskingum College
- Philip Mayall Francoeur, Jr., Maryland  
A.B. 1963, Colgate University
- William F. Frantz, Virginia  
B.S. 1963, University of Houston
- Gary Floyd Glasgow, Texas  
A.B. 1963, University of Oklahoma
- Herbert Lee Goldblatt, District of Columbia  
A.B. 1963, The George Washington University
- Arnold Grant, Maryland  
B.S. in I.E. 1962, University of Alabama
- Stanley Barry Green, Maryland  
B.E.E. 1962, City College, New York
- Charlotte Boyd Hallam, Maryland  
A.B. 1960, Antioch College
- Mathew Jack Hatchadorian, Ohio  
A.B. 1963, Colgate University
- John Charles Hendricks, Pennsylvania  
A.B. 1963, Dickinson College
- Edmund Jerry Higginson, Maryland  
B.S. 1963, Mount Saint Mary's College, Maryland
- Philip Morris Hinderstein, Maryland  
B.E.E. 1962, City College, New York
- Gladys Elkin Hirsch, Maryland  
A.B. 1940, Hunter College
- Horst Dieter Hoinkes, District of Columbia  
B.S. in M.E. 1962, University of Rochester
- Christopher Michael Holland, Florida  
B.S. 1958, U.S. Coast Guard Academy
- John Duff Houston II, Virginia  
A.B. 1963, Haverford College
- Richard Lee Huff, Maryland  
A.B. 1955, Lincoln University, Pennsylvania
- Ross Franklin Hunt, Jr., Virginia  
B.E.E. 1962, University of Virginia
- Kenneth Grant Hutchins, Texas  
A.B. 1963, University of Texas
- Randall William Ishmael, Arkansas  
B.S. 1963, Arkansas State College
- Harry Wilson Jacobs, Alaska  
B.S. in F.S. 1955, Georgetown University
- Donn Keyes Jenkins, Maryland  
B.M.E. 1956, University of Virginia
- Robert Edward Jensen, Virginia  
B.S. 1960, Miami University
- Brian Allan Johnson, Maryland  
A.B. 1963, Duke University
- Courtney Been Justice, Indiana  
A.B. 1963, Wabash College
- Asimina Milton Karlos, New Jersey  
A.B. 1963, Barnard College
- Geoffrey Tate Keating, Maryland  
A.B. 1962, Ohio Wesleyan University
- Thomas Louis Kelly, Virginia  
A.B. 1963, Albright College
- Norman Raymond Keyes, Jr., Pennsylvania  
A.B. 1960, Dickinson College
- Richard Calvin Keys, Virginia  
B.S. in B.A. 1958, American University
- Walter N. Kirn, Jr., Virginia  
A.B. 1960, Princeton University
- M.S. 1962, Ohio State University
- Martin Klauber, New Jersey  
A.B. 1963, Rutgers, the State University
- Stephen W. Kline, Pennsylvania  
A.B. 1962, Temple University
- Mark Alan Latterman, Maryland  
A.B. 1963, Michigan State University
- Denis Chunn Hung Leong, Hawaii  
B.S. 1963, Oregon State University
- Nancy M. Lilly, District of Columbia  
B.S. 1959, Georgetown University
- Robert Victor Lottmann, District of Columbia  
B.S. in M.E. 1962, Purdue University
- Jed Barnes Maebius, Jr., Texas  
A.B. 1963, University of Michigan
- Paul William Mandry, Ohio  
B.S. in Engr. 1960, U.S. Military Academy
- Phoebe Nan Matthews, District of Columbia  
A.B. 1960, Wellesley College
- M.S. in Ed. 1963, University of Pennsylvania
- Vera Waltman Mayer, New York  
A.B. 1950, A.M. 1953, University of Chicago
- James L. McBride, Virginia  
A.B. 1963, University of Utah
- Paul F. McCaul, Virginia  
B.E.E. 1962, New York University
- James Patrick McMann, Maryland  
B.S. in Ed. 1960, Pennsylvania State College, Lock Haven
- Allen David Mednick, New York  
A.B. 1963, City College, New York
- Martin Mendelsohn, New York  
A.B. 1963, Brooklyn College
- Armando M. Menocal III, Florida  
A.B. 1963, University of Florida
- Joseph Bennett Merryman III, Pennsylvania  
B.S. 1962, Pennsylvania State University
- Robert Crowe Miller, New York  
B.M.E. 1963, Clarkson College of Technology
- Roy Bratton Moffitt, North Carolina  
B.Geol.Engr. 1952, Ceramic Engr. 1957,  
B.S. in Ch.E. 1962, North Carolina State University
- Larry Dean Montgomery, Maryland  
A.B. 1960, Southwestern College, Kansas
- Martin Schaffner Mueller, New York  
A.B. 1963, Brown University
- Michael Joe Myers, District of Columbia  
B.S. in E.E. 1963, University of Illinois
- Mary Anita Nordale, Alaska  
A.B. 1957, Gonzaga University
- Richard C. Noren, Connecticut  
A.B. 1963, Harvard University



- Ronald Jack Ockey, Utah  
A.B. 1959, University of Utah
- John Stanley Pachter, Virginia  
A.B. 1963, Tulane University of Louisiana
- Richard Wayne Pell, Delaware  
A.B. 1963, DePaul University
- Barry Alan Perlow, New Jersey  
B.S. 1963, Pennsylvania State University
- Daniel William Persinger, District of Columbia  
A.B. 1963, The George Washington University
- Allan Saunder Pilson, New York  
A.B. in Ed. 1963, American University
- Robert Julian Pittman, Virginia  
A.B. 1950, The George Washington University
- Mildred Elaine Vannatta Pitts, New York  
A.M. 1953, Syracuse University
- Joseph Fletcher Radford, Jr., Virginia  
A.B. 1963, University of Notre Dame
- Carol Leigh Rajoppi, New Jersey  
A.B. 1963, Northeastern University
- Irving Shale Rappaport, Missouri  
B.S. in E.E. 1962, Washington University
- Arthur M. Rayman, New York  
A.B. 1963, Brooklyn College
- David Lee Reisdorf, Maryland  
B.S. in Met.Engr. 1962, Case Institute of Technology
- Robert Neal Richards, Virginia  
B.S. 1951, M.S. 1955, Brigham Young University
- Robert J. Richardson, Wisconsin  
B.S. 1963, Wisconsin State College, River Falls
- David P. Roberts, Washington  
B.S. in M.E. 1959, Washington State University
- Harvey Howard Rosen, Virginia  
A.B. 1962, City College, New York
- Mark L. Rosen, Maryland  
A.B. 1963, University of Vermont
- Seth David Rosen, Connecticut  
A.B. 1963, The George Washington University
- Stuart Philip Ross, District of Columbia  
A.B. 1963, The George Washington University
- Robert Francis Rotella, New York  
B.E.E. 1962, New York University
- Robert James Routh, Nebraska  
A.B. 1963, Nebraska Wesleyan University
- Frederic Lee Ruck, Ohio  
B.S. 1963, University of Cincinnati
- Horace Anthony Ruckel, New Mexico  
A.B. 1963, University of Colorado
- Charles Edel Sandler, Maryland  
B.S. 1961, University of Maryland
- Alan Walter Schefflin, New York  
A.B. 1963, University of Virginia
- Norman K. Schwab, District of Columbia  
A.B. 1962, University of Maryland
- Martin Charles Schwartzberg, New York  
A.B. 1963, College of Emporia
- John Scott Seanor, Virginia  
A.B. 1962, Mount Union College
- Charles Henry Seilheimer, Jr., New York  
A.B. 1963, Middleburg College
- William A. Semons, Virginia  
A.B. 1962, Ohio State University
- Robert Mitchell Sielaty, Virginia  
A.B. 1963, Ohio State University
- David Silberman, New York  
A.B. 1963, American University
- Elias Silverstein, Maryland  
B.S. in Comm. 1963, Rider College
- Robert Morris Skolnik, Maryland  
B.E.E. 1962, University of Virginia
- George Cope Stewart III, Virginia  
A.B. 1963, University of Washington
- Ray Downie Stewart, California  
A.B. 1963, Pomona College
- Robert Campbell Stewart, Maryland  
A.B. 1961, University of Maryland
- Kenneth Frank Stinger, District of Columbia  
A.B. 1963, Rutgers, the State University
- Mary Elizabeth Storm, Maryland  
A.B. 1962, Hood College
- William Tabac, Ohio  
A.B. 1962, Western Reserve University
- Douglas Richard Taylor, Maryland  
A.B. 1963, University of Maryland
- Philip Reid Tracy, Jr., Nebraska  
A.B. 1963, University of Nebraska
- Robert Peter Visser, New York  
B.S. 1963, City College, New York
- Jack H. Vital III, Virginia  
B.B.A. 1961, Marshall University
- Gerald Richard Walsh, Pennsylvania  
B.S. 1959, University of Scranton
- Richard Dexter Warren, Maryland  
A.B. 1963, University of the South
- Alan Michael Warshauer, New York  
A.B. 1963, Brooklyn College
- Radcliffe Chapman Welles, California  
A.B. 1963, San Diego State College
- George Herbert Whitcomb, Maryland  
A.B. 1955, University of Maryland
- Donald Edward Williams, District of Columbia  
B.Ch.E. 1954, Rensselaer Polytechnic Institute
- James McDonald Williams, Virginia  
B.S. 1963, Abilene Christian College
- Scott Alvin Williams, Virginia  
A.B. 1963, Dickinson College
- Charles Elliott Wilson, Jr., Maryland  
A.B. 1963, Ohio Wesleyan University
- Paula Ruth Wirtzman, Pennsylvania  
A.B. 1963, Sweet Briar College
- Peter Xiarhos, Virginia  
B.S. in E.E. 1962, Northeastern University
- William Paul Yeatman, District of Columbia  
B.S. 1954, D. C. Teachers College
- Thomas Michael Zimmer, Illinois  
A.B., B.S. 1963, University of Illinois
- Herbert Lee Zipperian, Virginia  
A.B. 1957, University of Chicago

## MASTER OF LAWS

- Milton Darrell Andrews, Oklahoma  
B.S. 1959, Phillips University  
LL.B. 1963, University of Oklahoma
- Leonard Frank Binder, Virginia  
A.B. 1960, Columbia University  
LL.B. 1963, New York University
- John Foster Bruce, Maryland  
A.B. 1962, The George Washington University  
LL.B. 1965, University of Virginia
- Samayla Dodek Deutch, District of Columbia  
A.B. 1961, Wellesley College  
J.D. 1964, University of Chicago
- Hugh J. Dolan, New York  
A.B. 1950, LL.B. 1952, St. John's University,  
New York
- Gary Joel Edles, New York  
A.B. 1962, Queens College, New York  
LL.B. 1965, New York University



- Martin Alan Frey, New York  
B.S. in M.E. 1962, Northwestern University  
J.D. 1965, Washington University
- Beatrice Galos Fuchs, Maryland  
LL.B. 1944, Brooklyn Law School
- Robert Robinson Gales, New York  
A.B. 1962, Ohio Wesleyan University  
LL.B. 1965, Syracuse University
- Stephen Norman Gell, Virginia  
A.B. 1960, Dartmouth College  
LL.B. 1963, University of Pennsylvania
- John Warren Girvin, Jr., Virginia  
B.E.E. 1960, University of Virginia  
LL.B. 1964, The George Washington University
- Martin Lester Glass, Kansas  
A.B. 1956, M.S. in Ed. 1957, University of Southern California  
LL.B. 1961, University of California, Los Angeles
- Stephen Paul Goldman, District of Columbia  
A.B. 1961, University of Chicago  
LL.B. 1964, Yale University
- Seymour Herman, Maryland  
B.S. 1948, LL.B. 1952, New York University
- Donald Bruce Kornreich, New York  
A.B. 1959, New York University  
LL.B. 1962, Harvard University
- Gerald P. Moran, Maryland  
B.S. 1960, University of Scranton  
LL.B. 1963, Catholic University of America
- William Wayne Nelson, Oklahoma  
A.B. 1960, LL.B. 1963, University of Oklahoma
- Robert Sidney Perkins, Virginia  
A.B. 1960, University of Florida  
LL.B. 1964, The George Washington University
- Ulrico Reale, District of Columbia  
LL.B. 1963, John Marshall Law School
- Max B. Rothman, District of Columbia  
A.B. 1962, Lafayette College  
LL.B. 1965, University of Michigan
- Robert Joyce Rottman, Missouri  
LL.B. 1951, St. Louis University
- Roy Lee Schooling, Maryland  
B.S. in Bus. 1951, LL.B. 1956, Oklahoma City University
- Carl Walter Schwarz, Wisconsin  
B.C.E. 1958, Cornell University  
J.D. 1962, The George Washington University
- Joseph Sexton, Illinois  
A.B. 1962, LL.B. 1965, Harvard University
- William Thomas Westmoreland, Jr., Texas  
B.S. in Comm. 1940, LL.B. 1942, Southern Methodist University
- Henry Wallace Witcover, District of Columbia  
A.B. 1937, Duke University  
A.M. 1937, The George Washington University  
LL.B. 1951, Stanford University

### DOCTOR OF JURIDICAL SCIENCE

- Mahmood Suleiman Maghribi, Libya  
Comparative Law  
Dissertation: *Petroleum Legislation in Libya*  
LL.B. 1958, University of Damascus, Syria  
M.Comp.L. 1964, The George Washington University

### DEGREES CONFERRED, SEPTEMBER 30, 1966

#### BACHELOR OF LAWS

- Thomas Alworth, New Jersey  
A.B. 1963, Duke University
- James Hayward Bean, Virginia  
A.B. 1962, Brigham Young University
- Peter Lewis Berger, Virginia  
B.E.E. 1961, City University of New York
- James Oscar Billey, North Dakota  
B.S. in C.E. 1957, University of North Dakota
- Barry Blyveis, Maryland  
A.B. 1961, University of Michigan
- William Stevens Boesch, Virginia  
A.B. in Govt. 1963, The George Washington University
- Gary Mahlon Breneman, Virginia  
A.B. 1960, University of Kansas
- John Joseph Brier, Pennsylvania  
B.S. 1963, University of Scranton
- Denny Lee Brown, Idaho  
B.S. 1960, Brigham Young University
- Max Frederick Brunswick, Connecticut  
A.B. 1963, American International College
- George Joseph Collins, District of Columbia  
B.S. 1953, Southern Connecticut State College
- A.M. 1955, Yale University  
Ed.D. 1958, Columbia University
- Donald George Daus, Virginia  
B.S. in C.E. 1953, University of Illinois  
M.S. 1954, Michigan State University
- Kenneth Wayne Dobyns, Virginia  
B.E.E. 1961, University of Virginia
- Bernard Alfred Donahue, Virginia  
B.S. in C.E. 1955, University of Washington
- Jack George Dranttel, Minnesota  
B.S. 1963, U.S. Naval Academy
- James Nelson Dresser, Virginia  
B.S. in EE. 1959, Purdue University
- David Bruce Dryden, California  
B.S. 1960, Brigham Young University
- Lawrence Andrew Durkin, Pennsylvania  
A.B. 1963, University of Scranton
- James Joseph Frank, Maryland  
B.S. 1961, Austin Peay State College
- Paul William Freitag, Nevada  
A.B. 1964, University of Nevada
- Ralph Everett Harper, Maryland  
A.B. 1956, University of Rochester
- David Barge Hart, Virginia  
A.B. 1963, The George Washington University
- George Albert Herbster, Virginia  
B.S. in E.E. 1960, Lafayette College



- John Malcolm Hollingsworth, Jr., Pennsylvania  
A.B. 1963, University of Pittsburgh
- Clifton Lee Holmes, Texas  
A.B. 1961, University of Texas
- Thomas Patrick Huber, Maryland  
B.S. 1959, Marquette University
- Graham Callahan Huston, Connecticut  
A.B. 1963, Duke University
- Mark Whitmore Ingraham, Jr., Maine  
B.S. 1942, University of Maine
- David Tsuneaki Ishikawa, Hawaii  
A.B. 1961, San Jose State College
- Charles A. Kubinski, District of Columbia  
B.B.A. 1960, St. John's University, New York
- Robert Allen Lawrence, Virginia  
B.S. 1962, Columbia University
- Darwyn Hall Lesh, Virginia  
A.B. 1963, The George Washington University
- Gayle Bertram Matthews, Virginia  
A.B. 1963, The George Washington University
- Joseph Willard Maxey, Jr., Oklahoma  
B.B.A. 1963, University of Oklahoma
- Hansel L. McGee, New York  
B.S. 1952, City University of New York
- M.S. 1960, Polytechnic Institute of Brooklyn
- Harry Walton McKee, North Dakota  
Ph.B. 1963, University of North Dakota
- John F. McNulty, Pennsylvania  
B.S. in M.E. 1963, Drexel Institute of Technology
- Irwin Howard Mess, District of Columbia  
A.B. 1958, Clark University
- Corinna Lothar Metcalf, District of Columbia  
A.B. 1952, University of California
- Martin Alan Meth, Maryland  
B.E.E. 1963, City University of New York
- David Russell Murphy, Virginia  
B.Ch.E. 1957, Rensselaer Polytechnic Institute
- James Roger Murphy, Maine  
A.B. 1963, College of the Holy Cross
- George K. Noguchi, Hawaii  
A.B. 1961, University of Hawaii
- George Edwin Norcross, District of Columbia  
B.S. in F.S. 1961, Georgetown University
- William George Ohlhausen, Missouri  
B.S. 1962, St. Louis University
- John Andrew Prokop, Jr., District of Columbia  
A.B. 1961, The George Washington University
- Robert Case Raymond, District of Columbia  
A.B. 1962, University of Washington
- Charles Robert Rhodes, Virginia  
B.S. in Ind.Engr. 1960, University of North Carolina at Raleigh
- Vernon R. Rice, Virginia  
B.S. 1963, Utah State University of Agriculture and Applied Science
- Keith Von Rockey, Illinois  
B.S. in Ch.E. 1963, Purdue University
- Matthew Jay Rosen, New York  
A.B. 1962, University of Pennsylvania
- Gordon Howard Rubin, District of Columbia  
A.B. 1962, University of California, Los Angeles
- Eugene Joseph Schreiber, Missouri  
B.S. in C.E. 1959, Purdue University
- Bruce Irvin Smith, Nebraska  
A.B. 1963, Nebraska Wesleyan University
- Jean Grove Taylor, District of Columbia  
A.B. 1949, Sweet Briar College
- A.M. 1951, Cornell University
- Dale Henry Thiel, Virginia  
B.S.E. 1958, M.S.E. 1960, University of Michigan
- Don Croft Tingey, Virginia  
B.S. 1962, University of Utah
- Oliver Elwyn Todd, Jr., Ohio  
B.S. (E.E.), B.S.E. (Math.) 1963, University of Michigan
- Edward William Tupling, Maryland  
A.B. 1963, The George Washington University
- Francis Stephen Urbany, Pennsylvania  
A.B. 1955, Harvard University
- Monroe M. Wallace, New York  
A.B. 1963, Lafayette College
- William Randolph Young, Virginia  
A.B. 1952, Richmond College

#### MASTER OF LAWS

- Thomas Merritt Adams, Virginia  
A.B. 1956, LL.B. 1960, Washington University
- Frank H. Czajkowski, Maryland  
A.B. 1957, LL.B. 1959, St. John's University, New York
- Robert Upshur Soniat, Louisiana  
A.B. 1961, LL.B. 1964, Tulane University of Louisiana

#### MASTER OF COMPARATIVE LAW

- Narinder Kaur, Virginia  
A.B. 1955, LL.B. 1957, Lucknow University, India
- Mohammad Abdul-Kereim Shaikhli, Virginia  
A.B. 1950, University of Baghdad, Iraq

#### MASTER OF COMPARATIVE LAW (American Practice)

- Sung Yoon Cho, Maryland  
LL.B. 1953, Seoul National University, Korea  
A.M. 1957, Ph.D. 1963, Tulane University of Louisiana
- Joseph August Mikus, District of Columbia  
J.D. 1934, University of Bratislava, Czechoslovakia



## WINTER CONVOCATION, FEBRUARY 22, 1967

## BACHELOR OF LAWS

Student Marshal: Eric Vikar Youngquist

- Gary Ross Alexander, Virginia  
A.B. 1964, University of Virginia
- J. Gordon Arbuckle, Maryland  
A.B. 1963, University of Maryland
- Joan E. Baker, District of Columbia  
A.B. 1953, Reed College
- Raymond Leo Bartos, California  
A.B. 1964, California State College, Los Angeles
- David Bielawski, Maryland  
A.B. 1955, University of North Carolina
- Gilbert Daniel Bloom, Maryland  
B.S. 1962, University of Maryland
- James R. Boler, District of Columbia  
B.M.E. 1961, University of Minnesota
- Robert Thomas Bond, Maryland  
A.B. 1954, Southern Missionary College
- Waymond Donald Bray, Georgia  
B.S. 1963, Howard University
- John Michael Brennan, Maryland  
B.S. 1961, Spring Hill College
- Frederick Francis Burgess, Jr., New York  
B.S. 1958, U.S. Coast Guard Academy
- Timothy Peter Burke, Virginia  
A.B. 1963, Pennsylvania State University
- James Walter Carpenter III, Virginia  
A.B. 1959, Oklahoma Baptist University
- Rudolph Valentino Cassani, Virginia  
B.S. 1950, State University of New York, Maritime College
- Paul Aaron Chernoff, Connecticut  
B.S. in M.E. 1961, Tufts University
- Dale Walker Church, Oregon  
B.S. 1962, Oregon State University
- William Daniel Cremins, Virginia  
A.B. 1960, St. Bonaventure University
- Thomas Edward Currier, Virginia  
B.Engr. 1960, Yale University
- M.Chem.Engr. 1964, University of Delaware
- Gordon Woodward Daiger, District of Columbia  
A.B. 1953, Princeton University
- Stephen Farrell Darley, Virginia  
B.S. 1964, Utah State University of Agriculture and Applied Science
- Martha Jane Edmisten, North Carolina  
A.B. 1960, A.M. 1962, University of North Carolina
- Rufus L. Edmisten, North Carolina  
A.B. 1963, University of North Carolina
- Alvin Ezrin, Maryland  
B.S. in Phar. 1963, The George Washington University
- Robert Carter Fisk, New York  
A.B. 1963, Yale University
- Paul Howard Ford, Maryland  
B.S. 1951, University of Maryland
- Robert Nelson Ford, Maryland  
A.B. 1952, The George Washington University
- Alpheus Edwin Forsman, Virginia  
A.B. 1963, The George Washington University
- Robert T. Gaston, Maryland  
A.B. 1963, College of William and Mary
- Shirley Collier George, Oklahoma  
B.S. 1954, Oklahoma State University of Agriculture and Applied Science
- Jack J. Goehring, Jr., Virginia  
A.B. 1963, University of Connecticut
- Edward William Goldstein, Maryland  
B.S. in C.E. 1963, Pennsylvania State University
- Richard Verne Gose, Virginia  
B.S. 1950, M.E. 1959, University of Wyoming
- M.S. 1955, Northwestern University
- Sara Elizabeth Green, Virginia  
A.B. 1960, University of North Carolina
- Joseph Michael Hayes, Texas  
A.B. 1956, Williams College
- Tom Hiatt, Virginia  
B.S. 1963, University of Illinois
- Thomas James Hoffmann, Ohio  
A.B. 1962, Kenyon College
- B.S. 1963, University of Michigan
- Michael Lovejoy Houlston, Virginia  
A.B. 1964, The George Washington University
- Harold S. Jacobson, Virginia  
B.S. 1962, University of Wisconsin
- Gilbert Lee Jacox, Michigan  
B.S. 1960, University of Maryland
- David Wayne Johnson, Maryland  
B.S. in Engr.Phys. 1958, University of Maine
- Raymond Joseph Klapinsky, Delaware  
A.B. 1960, University of Delaware
- John Mather Kneipple, Maryland  
A.B. 1959, Yale University
- George James Konomos, District of Columbia  
B.S. in B.A. 1961, University of Arizona
- Donald Francis Lavanty, Maryland  
A.B. 1963, The George Washington University
- Albert C. Lefebvre, Maryland  
B.S.L. 1959, Georgetown University
- Charles Philip Leiner, California  
B.S. 1951, San Diego State College
- John Brownell Lynn, Iowa  
B.S. 1957, U.S. Coast Guard Academy
- Barry Lee Mack, Pennsylvania  
A.B. 1961, University of Pennsylvania
- Edward Thompson Magoffin, Jr., Virginia  
B.S. in B.A. 1963, University of Florida
- William James Mason, Virginia  
B.S. 1962, Tennessee Polytechnic Institute
- George Michael Mecham, Utah  
B.S. 1963, University of Utah
- Carl Albert Modecki, Virginia  
A.B. 1964, University of Kentucky
- John Dominick Mollozzi, New Jersey  
A.B. 1963, Jersey City State College
- Allen William Neece, Jr., Virginia  
A.B. 1964, College of Idaho
- Robert Spencer Oliver, Maryland  
A.B. 1960, Texas Christian University
- John Perazich, District of Columbia  
A.B. 1963, Oberlin College
- Richard Clarel Pflager, Virginia  
A.B. 1960, Lawrence University
- James Henry Pitts, Maryland  
B.S. 1958, University of Maryland
- Donald Gene Reiman, Virginia  
A.B. 1963, University of Washington
- Ronald Eugene Resh, Maryland  
B.S. 1960, Pennsylvania State University



Donald Clarence Robinson, Montana  
A.B. 1963, Montana State University  
Donald Frank Rosendorf, District of Columbia  
A.B. 1964, The George Washington University  
Leonard Joseph Santisi, Maryland  
B.M.E. 1961, Cornell University  
William J. Schramm, Virginia  
B.S. 1962, Fordham University  
Richard Harris Sheehan, Jr., Virginia  
A.B. 1964, The George Washington University  
Roland H. Shubert, District of Columbia  
B.S. Pet. Engr. 1958, Colorado School of Mines  
Edward Noah Simon, Virginia  
A.B. 1963, College of William and Mary  
Edward Walter Somers, Maryland  
B.E. 1953, M.S. 1955, Johns Hopkins University  
Gerard Robert Strecker, Virginia  
B.S. in E.E. 1961, Drexel Institute of Technology  
Ross Hain Swope, Virginia  
B.S. in Phar. 1961, The George Washington University

David Albert Tamburro, Maryland  
B.S. in M.E. 1961, Lafayette College  
Larry Jay Taylor, Virginia  
B.S. 1956, University of Utah  
Charles Joseph Tennant, District of Columbia  
B.S. in B.A. 1964, American University  
Stuart Hammond Theis, New York  
A.B. 1964, Rutgers, the State University  
Thomas Neal Tripp, Ohio  
A.B. 1964, Michigan State University  
Arthur Victor Weinberg, Maryland  
A.B. 1963, University of Maryland  
Gerald Ray Woods, Virginia  
B.S. 1963, Iowa State University of Science and Technology  
Arnold Leon Yochelson, Maryland  
B.S. 1963, Pennsylvania State University  
Donald Paul Young, Maryland  
A.B. 1961, University of Maryland  
Eric Vikar Youngquist, Michigan  
A.B. 1950, University of Michigan  
A.M. 1951, University of Wisconsin

#### MASTER OF LAWS

Earl Philip Adamaszek, Michigan  
A.B. 1961, Georgetown University  
LL.B. 1964, University of Michigan  
Thomas William Bullinger, District of Columbia  
B.S. in M.E. 1961, Case Institute of Technology  
J.D. 1964, Western Reserve University  
James Ignatius Burkhardt, Virginia  
B.S. 1956, Pennsylvania State University  
LL.B. 1960, The George Washington University  
Mack E. Davis, District of Columbia  
B.S. 1951, LL.B. 1957, South Carolina State College  
Larry Kenneth Harrington, Virginia  
A.B. 1962, Kentucky Wesleyan College  
LL.B. 1965, Vanderbilt University

Philip Robert LeVine, Massachusetts  
A.B. 1962, LL.B. 1965, Boston University  
William Gene McCollom, Montana  
A.B. 1958, Harvard University  
LL.B. 1964, University of Virginia  
D. Alden Newland, Virginia  
A.B. 1960, College of William and Mary  
LL.B. 1963, The George Washington University  
Donald D. Schaut, Virginia  
LL.B. 1962, University of Santa Clara  
Leonard Suchanek, Virginia  
B.S. 1958, LL.B. 1962, Creighton University

#### MASTER OF COMPARATIVE LAW (American Practice)

Nivea Ruth Neuhauser, District of Columbia  
Doctor of Laws 1958, School of Laws, Uruguay

Yutaka Tsuboi, Japan  
B.S.S. 1955, Sizuoka University, Japan  
LL.M. 1957, Meiji University, Japan

### Students Registered, Spring Semester 1967

#### STUDENTS REGISTERED IN THE BACHELOR OF LAWS PROGRAM

A

Aarsand, Knut J.  
A.B. 1961, Marshall University  
Abbott, Edward S.  
A.B. 1965, University of Florida  
Ablard, James E.  
A.B. 1965, Pennsylvania State University  
Ablove, Essie A.  
A.B. 1965, Barnard College  
Abramson, Martin  
B.E. 1965, City College, New York

Va. Ackerman, George O.  
A.B. 1964, Marquette University  
Fla. Adams, Bruce L.  
B.S. 1965, Newark College of Engineering  
Va. Adams, Jon H.  
A.B. 1965, Colgate University  
N.Y. Adams, Robert M., III  
A.B. 1966, Gettysburg College  
N.Y. Adlerstein, Lawrence J.  
A.B. 1965, Alfred University

Ind.

N.J.

N.Y.

D.C.

N.Y.



Agins, Richard C.	N.Y.	Anderson, David A.	Va.
A.B. 1964, Rutgers, the State University		B.S. 1963, Purdue University	
Alderman, Linda F.	D.C.	Anderson, David E.	Va.
A.B. 1961, University of Florida		B.S. in Aero.Engr. 1954, West Virginia University	
A.M. 1962, University of Washington		M.S. in Aero.Engr. 1958, Aero.Engr. 1960, California Institute of Technology	
Aldridge, Donna C.	Md.	Anderson, Richard A.	Mich.
B.S. 1960, University of Maryland		B.S. in Ch.E. 1957, University of Iowa	
Alexander, Frederick L.	Va.	Andrews, Benjamin J., Jr.	N.Y.
A.B. 1961, Cornell University		A.B. 1963, Allegheny College	
Allen, Gary R.	Iowa	Angelone, David J.	Mass.
A.B. 1963, Northwestern University		B.S. 1964, Boston College	
Altman, Janet R.	D.C.	Appler, Thomas L.	Va.
A.B. 1964, Wellesley College		A.B. 1965, Princeton University	
Amato, Richard G.	D.C.	Ashley, Edward J.	D.C.
A.B. 1964, Georgetown University		A.B. 1964, Brown University	
Ament, Warren W.	Mich.	August, Joel E.	Calif.
A.B. 1963, University of Michigan		A.B. 1963, Dartmouth College	
Anders, Gerald K.	Md.		
A.B. 1965, University of Maryland			

## B

Bailey, William W.	Va.	Baumgarten, Leon I.	Pa.
B.S. in B.A. 1964, American University		A.B. 1966, Pennsylvania State University	
Baker, Gerald E.	Pa.	Baxter, Gary M.	Ill.
A.B. 1962, North Park College		B.S. 1966, Arizona State University	
M.A.T. 1964, Northwestern University		Bean, David H.	D.C.
Baker, John J.	N.J.	A.B. 1963, San Diego State College	
A.B. 1964, University of Pittsburgh		Beard, Christopher	D.C.
Balaban, Howard A.	Va.	B.B.A. 1965, The George Washington University	
A.B. 1965, The George Washington University		Beard, Richard R.	D.C.
Ballantyne, Richard L.	Ill.	B.B.A. 1966, The George Washington University	
B.S.E. 1965, University of Connecticut		Beavers, Michael W.	D.C.
Banks, Douglas W.	Va.	A.B. 1966, Washington and Jefferson College	
B.S. 1963, Brigham Young University		Beck, Stuart E.	Pa.
Banner, Dean C.	Idaho	B.S. in M.E. 1964, Drexel Institute of Technology	
B.S. 1964, Brigham Young University		Beckham, Donald D.	S.C.
Banoun, Raymond	Va.	A.B. 1957, University of South Carolina	
A.B. 1965, City College, New York		Beecroft, Joseph N.	Md.
Banta, William F.	Va.	A.B. 1965, Brigham Young University	
B.S. 1965, Northwestern University		Beemer, Diane F.	Va.
Barbaria, Anthony S.	Calif.	A.B. 1962, University of Colorado	
A.B. 1965, Stanford University		Behar, Stephen M.	N.Y.
Barbour, David F.	Mich.	A.B. 1965, Brooklyn College	
A.B. 1962, University of Michigan		Behringer, John W.	Ohio
Bardon, Lenore	Mass.	B.S. 1959, University of Dayton	
A.B. 1966, Hunter College		Beling, Dorothy	Va.
Baritz, Stanley E.	Md.	A.B. 1951, Smith College	
A.B. 1964, The George Washington University		Benderson, Eric S.	D.C.
Barnes, Rowland W.	Wyo.	A.B. 1964, Syracuse University	
B.S. 1962, Lebanon Valley College		Benefiel, John R.	Mich.
Baron, Ronald S.	N.J.	B.M.E. 1963, University of Detroit	
A.B. 1965, Bucknell University		Bennett, Edmund C.	R.I.
A.B. 1964, A.M. 1965, Kansas State University of Agriculture and Applied Science	Kans.	A.B. 1965, University of Bridgeport	
Bartlett, Jeffrey W.	Ill.	Benton, Margaret A.	Fla.
A.B. 1965, Beloit College		A.B. 1964, Ohio State University	
A.B. 1966, Yale University	N.Y.	Bereano, Bruce C.	N.Y.
Basheer, Baheej W.	Va.	A.B. 1966, The George Washington University	
B.S. 1965, U.S. Air Force Academy		Berg, David A.	Va.
Baskin, Peter M.	Conn.	B.S. 1961, University of Minnesota	
B.S. 1964, University of Hartford		M.S. 1962, Princeton University	
Barralian, Joseph L.	N.J.	Berger, Jerold F.	N.Y.
B.S. 1965, Fairleigh Dickinson University		B.B.A. 1963, City College, New York	
Bass, Alvin S.	N.Y.	Berkey, John W., Jr.	N.D.
B.S. 1962, City College, New York		A.B. 1966, North Dakota State University	
Bauer, Edward S.	Calif.	Berkley, Richard G.	Md.
B.S. 1965, California Institute of Technology		B.S. 1960, Pennsylvania State University	



- |   |             |  |        |
|---|-------------|--|--------|
| Berl, Joseph M.                             | N.Y.        | Brauer, Robert I.  | Conn.  |
| B.S. 1964, Columbia University              |             | A.B. 1964, University of Massachusetts                     | N.J.   |
| Berman, Peter J.                            | Md.         | Bredder, Roy S.  |        |
| B.S. 1965, University of Maryland           |             | A.B. 1965, Duke University                                 | Mich.  |
| Berman, Richard M.                          | Ind.        | Breimayer, Joseph F.                                       |        |
| B.S. 1965, University of Maryland           |             | B.S. in E.E. 1965, University of Detroit                   | N.Y.   |
| Bernstein, Robert A.                        | Md.         | Braverman, Burt A.   |        |
| B.S. 1965, Pennsylvania State University    |             | A.B. 1966, Miami University                                | Wash.  |
| Betts, Carolyn                              | Texas       | Brelsford, Lloyd E.  |        |
| B.S. 1954, North Texas State University     |             | A.B. 1963, Washington State University                     | Pa.    |
| Beutel, Robert J.                           | Ohio        | Brewer, Charles M.   |        |
| B.S. 1965, University of Dayton             |             | A.B. 1964, Pennsylvania State University                   | Ill.   |
| Bial, Madeleine S.                          | Ohio        | Briggerman, Steven L.                                      |        |
| A.B. 1964, Miami University                 |             | A.B. 1965, University of Chicago                           | Calif. |
| Blackburn, Richard W.                       | Mich.       | Brigham, Thomas A.   |        |
| A.B. 1964, Michigan State University        |             | A.B. 1966, Fresno State College                            | Va.    |
| Blake, Stephen F.                           | D.C.        | Bright, Patrick F.   |        |
| A.B. 1963, University of Maryland           |             | B.S. 1965, Georgetown University                           | Calif. |
| Blanchard, Daniel S.                        | Md.         | Brinck, Jeffrey K.   |        |
| B.S. 1966, Princeton University             |             | A.B. 1962, Dartmouth College                               |        |
| Blanchard, John J.                          | Ill.        | M.S. 1964, Stanford University                             | N.Y.   |
| B.S. 1966, Seton Hall University            |             | Broido, Michael W.   |        |
| Blankenbaker, Robert E.                     | Va.         | A.B. 1965, University of Pennsylvania                      | Va.    |
| B.Ch.E. 1966, University of Virginia        |             | Broman, Herbert D.   |        |
| Blish, John M.                              | Md.         | A.B. 1961, University of Maryland                          |        |
| A.B. 1966, The George Washington University |             | M.B.A. 1962, American University                           | Va.    |
| Bliss, Richard W.                           | Del.        | Brown, David S.  |        |
| A.B. 1964, University of Delaware           |             | A.B. 1966, Syracuse University                             | D.C.   |
| Bloomfield, Ronald J.                       | N.Y.        | Brown, Denny L.  |        |
| A.B. 1965, Brooklyn College                 |             | B.S. 1960, Brigham Young University                        | D.C.   |
| Blouch, John W.                             | Ind.        | Brown, Patricia L.   |        |
| A.B. 1962, Yale University                  |             | A.B. 1966, The George Washington University                | N.Y.   |
| Blum, Leonard                               | N.Y.        | Brozost, Michael E.  |        |
| A.B. 1964, Brooklyn College                 |             | A.B. 1964, The George Washington University                | Ohio   |
| Blumenfeld, Joel L.                         | N.Y.        | Bruckner, Arnold D.  |        |
| A.B. 1965, Brooklyn College                 |             | B.B.A. 1964, The George Washington University              | N.Y.   |
| Blumenthal, Ronnie                          | N.J.        | Brundage, Warner F., Jr.                                   |        |
| A.B. 1966, The George Washington University |             | A.B. 1966, University of Southern California               | N.Y.   |
| Blyer, Alvin P.                             | N.Y.        | Bruno, George C.   |        |
| A.B. 1966, Brooklyn College                 |             | A.B. 1964, Hartwick College                                | Va.    |
| Bogsch, Henry W.                            | Switzerland | Brunsvold, Brian G.  |        |
| B.S. in F.S. 1966, Georgetown University    |             | B.S. 1960, Iowa State University of Science and Technology | Va.    |
| Bomsey, Edward N.                           | N.Y.        | Bryan, Martha E.   |        |
| B.S. 1965, New York University              |             | A.B. 1966, Brenau College                                  | Conn.  |
| Bonner, William J.                          | Okla.       | Budarz, Virginia M.  |        |
| A.B. 1961, Phillips University              |             | A.B. 1964, Connecticut College                             | N.J.   |
| Bonsal, David C.                            | N.J.        | Buenzle, Robert J.   |        |
| A.B. 1966, College of William and Mary      |             | B.S. 1964, Drexel Institute of Technology                  | N.Y.   |
| Boraks, Robert A.                           | Fla.        | Bunim, David E.  |        |
| B.S. 1965, University of Pennsylvania       |             | A.B. 1965, University of North Carolina                    | Va.    |
| Bornstein, Joseph P.                        | Va.         | Burch, Richard K.  |        |
| B.S. 1965, University of Virginia           |             | A.B. 1966, Wichita State University                        | Va.    |
| Boswell, Peyton, III                        | Va.         | Burnette, Wilbert G.                                       |        |
| A.B. 1962, Lehigh University                |             | A.B. 1957, Emory University                                | Va.    |
| Boswell, Robert C.                          | D.C.        | Burrup, Mont L.  |        |
| A.B. 1966, LaSalle College                  |             | B.S. 1962, University of Utah                              | D.C.   |
| Boylan, James G.                            | Va.         | Buscher, William C.  |        |
| B.S. 1959, Marquette University             |             | A.B. 1961, M.S. 1963, John Carroll University              | N.Y.   |
| A.M. 1961, University of Washington         |             | Bushell, Kenneth M.  |        |
| Bradbury, William S.                        | Va.         | A.B. 1965, Queens College, N.Y.                            | Ariz.  |
| B.S. 1964, University of Arizona            |             | Butler, Arthur B., III                                     |        |
| Brauer, Lawrence M.                         | N.Y.        | A.B. 1966, Trinity College, Conn.                          |        |
| B.S. 1965, American University              |             |  |        |
| <br>C                                       |             |  |        |
| Cagan, Daniel W.                            | Md.         | Cameron, James R.  | N.Y.   |
| A.B. 1966, University of Maryland           |             | B.S. 1965, McGill University, Canada                       | N.Y.   |
| Caldwell, Joseph E.                         | N.M.        | Campbell, Andrews B.                                       |        |
| A.B. 1966, Colorado College                 |             | A.B. 1963, Harvard University                              |        |



Campbell, Bruce G. B.S. 1963, Bowling Green State University	Ohio	Coblentz, John E. B.S. 1965, U.S. Air Force Academy	Ind.
Campbell, Walter R. B.S. in F.S. 1965, Georgetown University	Md.	A.M. 1966, Georgetown University	
Canoyer, Mark R. B.B.A. 1966, Ohio University	Ohio	Cochran, John M., III A.B. 1963, College of William and Mary	Va.
Cant, Geoffrey D. B.S. 1959, U.S. Naval Academy	Md.	Cocke, Charles P. B.S. 1965, University of Virginia	Miss.
Cardella, Vincent G. A.B. 1957, Villanova University	Va.	Codlin, Dennis E. A.B. 1966, University of Miami	Ill.
Carman, James C. B.S. 1966, University of Utah	Utah	Cogan, Robert P. B.S.E. 1966, Cooper Union	N.Y.
Carpenter, Don S. A.B. 1966, Pennsylvania State University	Pa.	Cohen, Barry A. A.B. 1964, Rutgers, the State University	N.J.
Carpenter, James W., III A.B. 1959, Oklahoma Baptist University	Va.	Cohen, Ira M. A.B. 1965, University of Pennsylvania	N.J.
Carr, David T. A.B. 1965, Lake Forest College	Ill.	Cohen, Jay M. A.B. 1965, Temple University	D.C.
Carson, Carl W. A.B. 1961, Drew University	D.C.	Cohen, Leonard N. A.B. 1964, Rutgers, the State University	N.J.
Carson, Edith J. A.B. 1966, Tufts University		Cohen, Robert A. A.B. 1963, Ohio University	N.Y.
Carter, William K. A.B. 1966, Duke University	N.C.	Cohn, Ronald D. B.S. 1965, University of Illinois	Md.
Casey, Joseph E. A.B. 1964, American University	Va.	Cohrssen, John J. B.S. 1961, City College, New York	N.Y.
Casey, Joseph E. A.B. 1964, Dartmouth College	D.C.	M.S. 1963, McGill University, Canada	
Casey, Michael K. B.S. 1964, West Virginia University	W.Va.	Cole, Diane P. A.B. 1962, Pembroke College	D.C.
Casselman, William E., II A.B. 1963, Claremont Men's College	N.Y.	Collins, Lynn R. B.S. 1964, Brigham Young University	Md.
Castagnello, John D. A.B. 1965, New York University	N.Y.	Comstock, Gary R. B.S. 1964, Brigham Young University	Va.
Chandler, Catherine A. B.S. in F.S. 1966, Georgetown University	D.C.	Cooper, Barry A. B.E. 1966, City College, New York	N.Y.
Chandler, Lawrence J. A.B. 1966, Boston University	N.Y.	Cooper, Steven M. A.B. 1964, The George Washington University	D.C.
Chapman, Erie D. B.S. 1965, Northwestern University	Ohio	Coslov, R. Joel A.B. 1965, Brandeis University	Pa.
Charlotti, Anthony E. A.B. 1965, University of Pittsburgh	Pa.	Costello, Charles F. B.S. 1962, Villanova University	Pa.
Charney, Joseph P. A.B. 1966, Brooklyn College	N.Y.	Costley, Lloyd M. A.B. 1960, Trinity College, Conn.	S.C.
Charnoff, Robert J. A.B. 1965, Queens College, N.Y.	N.Y.	Cox, Roger D. B.S. 1964, Brigham Young University	Idaho
Chemnick, Paul W. A.B. 1966, The George Washington University	Ariz.	Crane, Elaine R. A.B. 1966, Vassar College	Va.
Chenoweth, Edwin J. B.S. in M.E. 1965, University of Michigan	Mich.	Crawford, Arthur R. B.S. 1966, Ohio Northern University	Ohio
Chizever, Gerald M. B.B.A. 1964, The George Washington University	N.Y.	Crawford, David L., Jr. B.S. in B.A. 1964, Georgetown University	Va.
Christison, Kenneth M. B.S. 1964, Montana State University	Md.	Crews, William E. A.B. 1966, Miami University	Ohio
A.M. 1966, The George Washington University		Creyke, Stephen R. B.F.A. 1963, Carnegie Institute of Technology	Md.
Christopher, George E. B.S. 1952, University of Maryland	Md.	Crimmins, Nancy L. A.B. 1964, The George Washington University	D.C.
Church, Lynne H. A.B. 1966, Goucher College	Va.	Crooks, Joseph W. A.B. 1964, Lehigh University	Md.
Churchill, Bruce W. B.S. 1961, University of Missouri	Md.	Crummey, John K. A.B. 1962, American University	Calif.
M.Bioradiology 1963, University of California		Culbert, Andrew C. A.B. 1966, University of New Hampshire	Mass.
Clark, Donald H. B.S. 1959, U.S. Naval Academy	Va.	Culbertson, Samuel A., III A.B. 1963, Claremont Men's College	Ill.
Clark, Douglas R. A.B. 1965, Bucknell University	N.J.	Cunningham, Gary M. A.B. 1966, University of Michigan	Tenn.
Cleary, John M. A.B. 1965, Catholic University of America	Minn.	Cunningham, Richard O. A.B. 1964, The George Washington University	Md.
Cum, John P. A.B. 1966, The George Washington University	D.C.		



## D

Daly, Michael L.	Minn.	Dietel, James E.	D.C.
A.B. 1966, Bucknell University		B.S. 1964, Southern Methodist University	Pa.
Damme, Catherine J.	Nebr.	Dietschi, Adelaide M.	
A.B. 1966, Mount Holyoke College		A.B. 1966, Goucher College	N.Y.
Dault, Gerard R.	N.Y.	Dietze, John L.	
A.B. 1960, St. Bernardine of Siena College		A.B. 1964, Hofstra College	D.C.
Davenport, David M.	Va.	Dillahunt, Troy	
B.S. 1965, Mount St. Mary's College, Md.		B.S. 1965, Oklahoma State University of	
David, Thomas M.	D.C.	Agriculture and Applied Science	Md.
A.B. 1960, Georgetown University		Dillian, James A.	
Davidson, Robert M.	N.Y.	B.S. 1945, U.S. Coast Guard Academy	N.Y.
B.S. in Ch.E. 1964, Purdue University		Dilligan, Michael A.	Brooklyn
Davis, Emily C.	Va.	B.Ch.E. 1961, Polytechnic Institute of Brooklyn	
B.S. 1949, Columbia University		M.S. 1962, University of Connecticut	Va.
Davis, Jon S.	Ohio	Dimond, Alan T.	
A.B. 1965, University of Michigan		B.B.A. 1965, University of Miami	Pa.
Davis, Malcolm H.	Calif.	Dixon, Edward A., Jr.	
A.B. 1965, New York University		A.B. 1962, Princeton University	Mo.
Davis, Michael R.	N.Y.	Dolan, Michael W.	
B.S. 1965, Rochester Institute of Technology		A.B. 1964, University of Kansas	Md.
Davis, Richard G.	Md.	Domico, Richard A.	
A.B. 1958, Lawrence University		B.S. 1964, University of Southwestern	
Day, James K.M.	Md.	Louisiana	D.C.
A.B. 1964, Bucknell University		Donnelly, Owen J.	Ohio
Decker, Ken C.	Ind.	A.B. 1954, The George Washington University	
B.S. 1964, Purdue University		Donohoe, Charles R.	
Deerin, James B., Jr.	D.C.	B.S. 1964, M.S. 1965, Ohio State University	Va.
A.B. 1965, The Citadel		Dost, Gerald A.	
Deitz, William T.	Va.	B.S. 1960, Pennsylvania State University	
Litt.B. 1953, Rutgers, the State University		A.B. 1961, Elizabethtown College	Va.
Denbo, James R.	D.C.	Dowell, William J.	
A.B. 1963, University of Michigan		A.B. 1966, The George Washington University	N.Y.
Denenberg, Daniel K.	Md.	Drescher, Jared M.	
A.B. 1965, University of Maryland		B.S. 1964, University of Vermont	Md.
deNourie, Herbert L.	Va.	Dribin, Leland G.	
B.S. 1958, University of Notre Dame		A.B. 1965, The George Washington University	Va.
Derry, Peter E.	Va.	Dublin, Robert A.	
A.B. 1962, Boston College		A.B. 1965, The George Washington University	D.C.
Determan, Sara-Ann H.	D.C.	Dubow, Seymour	
A.B. 1960, University of Delaware		A.B. 1965, Northwestern University	N.Y.
Dettmar, Joseph H.	Pa.	Duff, James T.	
A.B. 1966, LaSalle College		B.B.A. 1966, The George Washington	
Detweiler, John R.	Idaho	University	Va.
A.B. 1964, College of Idaho		Dunbar, Craig B.	
Dewhurst, Stephen B.	Va.	A.B. 1966, Texas A&M University	Va.
A.B. 1964, The George Washington University		Duncan, George C.	
Dick, Michael T.	Va.	B.S. 1939, U.S. Naval Academy	
A.B. 1964, University of Oklahoma		M.S. 1947, Massachusetts Institute of	Mich.
Dickerson, Harry A.	N.Y.	Technology	
A.B. 1964, University of Vermont		Dunchock, Arnold I.	Md.
Dickinson, Philip D.	N.J.	Ph.B. 1965, Wayne State University	
A.B. 1966, Franklin and Marshall College		Dunn, John T.	Md.
Dictrow, Joel P.	N.Y.	A.B. 1965, University of Notre Dame	
A.B. 1966, New York University		Duross, William H., III	Nev.
Diener, Lawrence B.	N.J.	A.B. 1965, Yale University	
A.B. 1965, Johns Hopkins University		Duty, John M.	Va.
Dier, Jerry L.	Md.	A.B. 1965, University of Nevada	
A.B. 1965, University of Maryland		Dyer, Norman C.	
		B.S. (S.S.) 1955, Georgetown University	

## E

Eames, Wendell B.	Md.	Edell, Ira C.	Md.
A.B. 1965, Brigham Young University		B.E.E. 1958, Polytechnic Institute of Brooklyn	
Earle, Douglas R.	Va.	Edelman, Lawrence	Fla.
A.B. 1965, Michigan State University		A.B. 1965, University of Maryland	
Ebel, John S.	Mo.	Edgar, George L.	
B.S. 1966, Washington University		A.B. 1963, B.M.E. 1964, Dartmouth College	



Eisenbud, Robert E. A.B. 1965, Washington College	N.Y.	Endicott, James A., Jr. B.S. 1960, The Citadel	Va.
Elbaum, Saul B.E.E. 1965, City College, New York	N.Y.	English, John W. A.B. 1966, University of Michigan	Mich.
Eleazer, William R. A.B. 1953, Vanderbilt University	Va.	Epstein, Robert H. B.S. in E.E. 1963, University of Maryland	Md.
Elgin, Laurence A. A.B. 1963, Northwestern University	D.C.	Evans, Noel K. A.B. 1963, University of Maine	Maine

## F

Favor, Freddie G. A.B. 1964, University of Arkansas	Ark.	Fogel, Jo Benson A.B. 1966, Duke University	Md.
Ferrante, Joseph A.B. 1962, Johns Hopkins University	Md.	Foster, Bernard A., III A.B. 1964, University of the South	D.C.
Fettig, Ronald C. B.S. 1956, Fordham University	Va.	Fox, Stephen P. B.S. in E.E. 1964, Northwestern University	Ill.
Fields, Kenneth R. A.B. 1965, New York University	N.Y.	Frank, Mark K., III B.S. in F.S. 1964, Georgetown University	Fla.
Fierer, Robert G. B.S. 1964, University of Notre Dame	Va.	Franklin, Robert N. A.B. 1965, New Mexico State University	Md.
Finan, Robert J. B.S. 1960, U.S. Coast Guard Academy	Va.	Frazier, Henry B., III A.B. 1956, University of Virginia	Va.
Fisch, Jeffrey H. B.S. 1965, University of Pennsylvania	N.J.	Freedhand, Martin L. A.B. 1964, Alfred University	N.Y.
Fish, Emanuel S. A.B. 1965, Rutgers, the State University	D.C.	Freedman, Edward R. M.B.A. 1965, University of Pittsburgh	Tenn.
Fisher, Gerald M. B.S. 1958, Drexel Institute of Technology	Md.	Freedman, Ilona E. A.B. 1962, Mount Holyoke College	Va.
Fitz, William H. A.B. 1964, Washington and Lee University	D.C.	Freedman, Mark S. A.B. 1965, Georgetown University	D.C.
Fitzpatrick, Robert B. A.B. 1964, The George Washington University	Md.	Frick, Gottlieb J., II A.B. 1963, Cornell University	Mo.
Fleet, Leslie G. A.B. 1965, American University	Va.	Fricker, John E. A.B. 1964, The George Washington University	Ill.
Fleicher, Charles H. A.B. 1966, University of Rochester	N.Y.	Friedman, Carol L. A.B. 1965, The George Washington University	N.Y.
Fleming, Joseph C., Jr. B.S. 1964, Brigham Young University	Ga.	Friedman, Gordon S. A.B. 1964, Miami University	Ohio
Flores, Benny E. A.B. 1963, New Mexico Highlands University	N.M.	Friedman, Martin J. A.B. 1964, University of Vermont	N.Y.
Flynn, Brian N. A.B. 1964, Rutgers, the State University	N.J.	Frost, Stanley F. A.B. 1962, New Mexico Highlands University	N.M.
Flynn, John T., Jr. A.B. 1964, University of Notre Dame	Md.	Fry, Harry A., Jr. B.S. 1964, Pennsylvania State University	Pa.
Foclak, Morton B.S. 1959, Brooklyn College	N.Y.		

## G

Gailor, Frank R. B.S. 1966, South Dakota State College	S.D.	Gault, Ronald T. A.B. 1962, Grinnell College	D.C.
Galanthay, Theodore E. B.E.E. 1961, Clarkson College of Technology	N.Y.	A.M. 1963, University of Michigan	
Garcia, Max N. A.B. 1963, University of Hawaii	Hawaii	Gaw, Mary J. A.B. 1963, Wellesley College	Md.
Gardiner, Joel F. A.B. 1966, University of Massachusetts	Mass.	Gelman, Robert A. A.B. 1966, Brooklyn College	N.Y.
Garrison, David F. A.B. 1965, Amherst College	Mass.	Geltzer, Robert L. A.B. 1965, Queens College, N. Y.	N.Y.
Garrison, David L. B.S. in Ch.E. 1963, Oregon State University	D.C.	Genner, Byron A., III M.D. 1954, State University of New York at Buffalo	D.C.
Gates, John R. A.B. 1964, Dickinson College	Pa.	Geraghty, John J. A.B. 1957, S.T.B. 1959, St. Mary's Seminary and University	Pa.
Gates, Ronald M. A.B. 1963, Franklin and Marshall College	D.C.	Gerber, Thomas J. A.B. 1966, Northwestern University	Ill.



Gersh, Victor B.	N.Y.	Graham, Robert L.	Va.
A.B. 1966, Michigan State University		B.B.A. 1964, The George Washington University	
Gilbert, Arthur S., III	D.C.	Gramse, Gaylin Q.	Mass.
A.B. 1963, Vanderbilt University		A.B. 1966, Mount Holyoke College	Kans.
Gildenhorn, Stanton J.	D.C.	Granger, Kerry J.	
A.B. 1964, The George Washington University		A.B. 1964, Kansas State Teachers College	N.Y.
Gillingham, Stephen T.	Minn.	Graubard, Mark D.	
A.B. 1966, Juniata College		A.B. 1966, Harpur College	N.Y.
Gilroy, Richard D.	South Africa	Gray, John C.	Va.
A.B. 1965, Ohio University		Gray, Mary S.	
Gins, Richard H.	Md.	A.B. 1950, Denison University	Hawaii
A.B. 1964, University of North Carolina		Grayson, David K.	
Glanzman, Gerald H.	Ind.	A.B. 1965, The George Washington University	D.C.
B.S. in M.E. 1964, Purdue University		Green, Edward T.	N.Y.
Glaser, Gary	N.Y.	A.B. 1961, The George Washington University	
A.B. 1965, City College, New York		Green, Howard R.	
Glasgow, Robert E.	Oreg.	A.B. 1964, University of California	Md.
A.B. 1966, The George Washington University		Greenberg, Roger E.	
Glickman, Danny R.	Kans.	A.B. 1966, University of Maryland	N.J.
A.B. 1966, University of Michigan		Greenberg, Stephen M.	
Godwin, Steven L.	Nev.	A.B. 1965, Washington and Jefferson College	D.C.
B.S. 1966, Brigham Young University		Greene, Paul F.	
Gogolak, Charles P.	N.Y.	B.S. 1960, College of the Holy Cross	N.Y.
A.B. 1966, Princeton University		Greenstein, Abraham J.	Pa.
Goldberg, Jack G.	N.Y.	A.B. 1965, New York University	
B.B.A. 1964, The George Washington University		Greenstein, Michael P.	Md.
Goldberg, James M.	D.C.	A.B. 1965, LaSalle College	
B.S. 1961, Syracuse University		Greer, Ralph S.	
Goldman, Howard S.	N.Y.	B.S. 1953, U.S. Military Academy	N.C.
B.S. 1965, University of Wisconsin		Gregory, Roger M., Jr.	Ga.
Goldsand, Richard I.	N.Y.	B.S. 1947, U.S. Naval Academy	
A.B. 1966, The George Washington University		Grieb, Michael A.	Md.
Goldsmith, Philip R.	Pa.	A.B. 1966, University of Maryland	
B.S. 1966, Pennsylvania State University		Griffith, Cleo	D.C.
Goldstein, Bruce	S.C.	A.B. 1965, Mount Holyoke College	
A.B. 1966, University of North Carolina		Grimm, John F.	Ohio
Goldstein, Jack C.	Md.	B.S. 1961, Fordham University	
B.S. in M.E. 1964, Purdue University		Gross, John H.	
Golub, Robert	N.Y.	B.S. 1964, University of Pennsylvania	Wash.
A.B. 1966, Trinity College, Conn.		Gross, Warren H.	Utah
Gordon, Richard F.	Utah	A.B. 1962, Whitman College	
B.S. 1964, Utah State University of Agriculture and Applied Science		Grover, Blair J.	Alaska
Goshorn, Kenneth W.	Pa.	B.S. 1964, Utah State University of Agriculture and Applied Science	
A.B. 1966, Carleton College		Gruening, Clark A.	Pa.
Gotkin, Michael M.	N.Y.	A.B. 1963, University of Oregon	
A.B. 1963, Brooklyn College		Gurne, Patricia D.	Md.
Gottesman, Roberta K.	Md.	A.B. 1965, MacMurray College	
A.B. in Ed. 1961, The George Washington University		Guss, Stephen E.	Calif.
Goulding, James E.	Idaho	A.B. 1964, American University	
B.S. 1965, Brigham Young University		Guthman, David H.	
Graev, Lawrence G.	N.Y.	A.B. 1964, California State College	
A.B. 1966, Cornell University		M.P.A. 1965, University of Southern California	

## H

Habel, Ronald W.	D.C.	Hampe, Richard A.	Mass.
B.S. 1960, Utah State University of Agriculture and Applied Science		A.B. 1965, University of Massachusetts	Fla.
Hadland, Kenneth W.	Ill.	Hamrick, Claude A.S.	Md.
B.S. in E.E. 1963, Purdue University		B.S. in E.E. 1963, University of Florida	
Hadley, Donald H.	Md.	Hansen, John R.	N.D.
A.B. 1964, The George Washington University		A.B. 1965, The George Washington University	
Halpert, Stuart D.	R.I.	Hanson, Jack W.	Fla.
A.B. 1964, Brown University		A.B. 1965, University of North Dakota	
Ham, Richard J.	Md.	Hanson, John L., Jr.	Idaho
A.B. 1966, The George Washington University		B.S. 1955, American University	
Hammond, Thomas W., III	Va.	Harding, Don L.	
A.B. 1966, The George Washington University		B.B.A. 1964, The George Washington University	



Hardy, Heber P. B.S. 1954, Brigham Young University	Nev.	Hoffman, Barry P. A.B. 1963, Pennsylvania State University	N.J.
Hargest, Robert F., III A.B. 1965, University of Maryland	D.C.	Hoffman, Peter B. B.S. 1964, Cornell University	N.Y.
Harmsen, Stephen M. B.S. 1966, University of Utah	Utah	Holcomb, Richard B. A.B. 1960, A.M. 1963, University of Oklahoma	Va. Ohio
Harney, Gregory N. A.B. 1960, The George Washington University	D.C.	Holden, John B., Jr. A.B. 1965, Ohio University	Ohio
Harris, Arthur J. A.B. 1965, Michigan State University	Mich.	Hollander, Charles A. A.B. 1966, University of Pittsburgh	N.Y.
Harrison, Bonnie K. A.B. 1965, Bucknell University	D.C.	Hollins, Michael S. A.B. 1966, Washington and Jefferson College	N.Y. D.C.
Hart, Bruce B. B.S. 1962, Western Michigan University	Md.	Holloran, Michael J. A.B. 1966, The George Washington University	D.C.
Hartary, Joseph W. B.S. 1959, Grove City College	Md.	Holmes, Donald C., Jr. B.S. 1965, University of Maryland	D.C.
Harter, Alan R. B.S. 1958, Utah State University of Agriculture and Applied Science	Va.	Holter, Dwight J. B.S. 1959, M.S. 1963, University of North Dakota	N.D.
Hartman, Pierre M. A.B. 1958, University of Colorado	Va.	Holum, John D. B.S. 1963, Northern State College	S.D. Va.
Harvey, Calvin R. A.B. 1965, Washington and Jefferson College	Va.	Honig, Roger S. B.B.A. 1964, The George Washington University	Va.
Hatch, Douglas L., Jr. A.B. 1962, American University	Va.	Hoover, Wayne B.S. in Ch.E. 1961, Purdue University	Ind.
Hatheway, Gordon W., Jr. B.S. 1965, Bucknell University	N.Y.	Hopkins, Bruce R. A.B. 1964, University of Michigan	Mich.
Hauser, Lawrence L. A.B. 1964, Georgetown University	Conn.	Hopkins, John O. A.B. 1955, A.M. 1956, Gonzaga University	D.C.
Hausfeld, Michael D. A.B. 1966, Brooklyn College	N.Y.	Hordes, Donald B. A.B. 1966, University of Maryland	Md.
Havelka, Ronnie D. B.S. 1964, University of Illinois	Ill.	Horowitz, Howard B. B.S. 1964, University of Maryland	D.C.
Hawkins, Carol T. A.B. 1966, Skidmore College	Hawaii	Hosford, Bowen I. A.B. 1939, Emory University A.M. 1956, American University	Va. N.Y.
Heasley, Ross E. A.B. in Govt. 1960, The George Washington University	D.C.	Hosmer, Bruce E. B.S. in Ch.E. 1964, Rensselaer Polytechnic Institute	N.Y.
Heeb, Jeffrey O. A.B. 1965, University of Kansas	Kans.	Hougland, Charles A. B.S. 1959, U.S. Naval Academy	Ky.
Heller, Stuart A. B.Ch.E. 1962, Rensselaer Polytechnic Institute	N.Y.	Howard, Robert E. A.B. 1964, University of Vermont	N.Y.
Helyer, Joseph A. B.S. 1962, Bowling Green State University	Ohio	Hoyt, Peter B. B.S. 1963, University of Virginia	Wis.
Herrick, William D. B.S. 1964, Northeastern University	N.H.	Huber, William R. B.S. 1932, U.S. Military Academy M.B.A. 1950, University of Michigan	Va. Pa.
Hertzberg, Michael A. A.B. 1966, Colgate University	N.Y.	Huberfeld, Harold B.S. 1965, Drexel Institute of Technology	Pa.
Heslton, Frank R., Jr. A.B. 1963, University of Michigan	Pa.	Hudson, William J., Jr. A.B. 1965, Duke University	Calif.
Hickson, Carolyn L. A.B. 1964, The George Washington University	D.C.	Hughes, Thomas J. A.B. 1964, University of Notre Dame	N.J.
Hiester, Daniel W., Jr. A.B. 1966, Dickinson College	Pa.	Hullingerhorst, Robert S. A.B. 1964, University of Wyoming	Va.
Hilken, Henry E. A.B. 1961, Harvard University	Md.	Hunter, John S. A.B. 1961, Georgetown University	Fla.
Hill, David L. B.S. 1963, University of Alabama	Md.	Hunter, Raymond M. A.B. 1966, Stanford University	Ariz.
Hill, F. John B.S. 1964, Brigham Young University	Idaho	Hurley, Daniel T.K. A.B. 1964, St. Anselm's College	Mass.
Hilliard, Robert C. A.B. 1965, Clemson University	S.C.	Hurwitz, Stephen I. A.B. 1964, Johns Hopkins University	Md.
Himelstein, Elliott M. A.B. 1962, Indiana University	Ariz.	Hynes, Denis E. B.S. 1964, St. John's University, Minn.	Va.
Hines, Margaret L. B.S. 1960, College of William and Mary	Va.		
Hink, Frederick P. A.B. 1964, The George Washington University	Va.		
Hodge, William H. B.S. in E.E. 1963, University of Arkansas	Md.		
M.S. 1964, University of New Mexico			



## I

Isaef, William E.	Nev.	Itnyre, Edwin R.	Md.
B.S. 1966, University of Nevada		A.B. 1952, The George Washington University	
Isikoff, Nathan R.	Md.		
A.B. 1964, Cornell University			

## J

Jackson, Thomas F., III	D.C.	Jolly, Charles N.	N.J.
A.B. 1962, Southwestern at Memphis		B.S. 1964, College of the Holy Cross	N.Y.
Jackson, William E.	D.C.	Jones, Roger D.	Va.
B.S. 1962, University of Rochester		A.B. 1965, St. Lawrence University	
Jacobs, Howard S.	N.Y.	Jones, Stanley D.	Pa.
Jagodzinski, Tim G.	Mich.	A.B. 1966, Wilkes College	Oreg.
B.E.E. 1965, General Motors Institute		Jones, Stephen R.	
James, Robert L.	D.C.	A.B. 1965, University of Michigan	
A.B. 1966, Cornell University		Jordan, Kim L.	N.Y.
Jani, Jerome J.	Calif.	B.S. 1963, Brigham Young University	
A.B. 1963, Catholic University of America		Joselow, Robert B.	Iowa
Johnson, Dale E.	Va.	A.B. 1966, New York University	
B.S. in M.E. 1959, University of Washington		Josten, Robert E.	N.Y.
Johnson, Philip L.	Va.	A.B. 1964, Morningside College	
A.B. 1955, Ohio Wesleyan University		Joy, Stephany L.	
Johnson, Robert A.	W.Va.	B.S. 1963, Le Moyne College, N.Y.	
A.B. 1957, A.M. 1961, Marshall University		A.M. 1965, The George Washington University	Va.
Johnson, Susan L.	Mass.	Judd, Robert L.	
B.S. 1963, University of Pennsylvania		A.B. 1963, Kalamazoo College	
Johnston, Rodney K.	Wis.	B.S.E. 1964, University of Michigan	
B.S. 1959, U.S. Naval Academy			

## K

Kaczensky, Tobey W.	D.C.	Kaufman, Stuart	N.Y.
A.B. 1966, Harvard University		A.B. 1965, New York University	Va.
Kagan, Gerald B.	Mass.	Kavrukov, Ivan S.	
A.B. 1964, University of Massachusetts		B.E.E. 1964, The George Washington University	Va.
Kahn, Bertrand J.	N.Y.	Kay, William F.	Fla.
A.B. 1966, The George Washington University		A.B. 1963, Yale University	
Kaller, Paul J.	Va.	Kelley, Carol P.	N.J.
A.B. 1966, Syracuse University		A.B. 1965, Wellesley College	
Kaminsky, Daniel J.	Ga.	Kelley, Joseph E., III	Va.
A.B. 1965, Emory University		A.B. 1965, Gettysburg College	
Kamrath, Raymond L.	Mont.	Kelly, John F.	Ill.
A.B. 1961, Montana State University		A.B. 1964, St. Anselm's College	
Kanter, David M.	Md.	Kemp, John M.	Calif.
B.S. 1964, American University		A.B. 1965, Michigan State University	
Kaplan, Roger P.	N.Y.	Kemper, Edward C.	Mont.
A.B. 1965, University of Maryland		A.B. 1965, The George Washington University	
Karpel, Curtis J.	N.Y.	Kendall, Richard J.	D.C.
A.B. 1966, American University		A.B. 1965, Montana State University	
Karsner, Georg R.	Ky.	Kerr, Peyton A., III	N.Y.
B.S. 1964, University of Kentucky		A.B. 1965, The George Washington University	
Kaschak, Robert J.	N.Y.	Kessler, Steven R.	Md.
A.B. 1965, Harpur College		A.B. 1964, Brooklyn College	
Kash, Lawrence S.	Ky.	Kiel, Frank W.	
A.B. 1964, Bucknell University		A.B. 1950, University of Pittsburgh	Ohio
Kashinski, Albert A.	Ill.	M.D. 1954, The George Washington University	
A.B. 1963, B.S. 1964, University of Notre Dame		Kile, Bradford E.	Pa.
Kassenoff, Melvyn M.	N.Y.	B.M.E. 1966, Ohio State University	
A.B. 1964, Columbia University		Kiley, Thomas D.	N.Y.
M.S. 1966, Massachusetts Institute of Technology		B.S. 1965, Pennsylvania State University	
Katz, Jay A.	N.Y.	Kimmel, Michael	
A.B. 1964, University of Rhode Island		A.B. 1959, Princeton University	
Katze, Edward	Mass.		
A.B. 1963, University of New Hampshire			



Kinney, Robert G. A.B. 1960, Ohio State University	Md.	Kopecki, Alan E. B.M.E. 1966, Villanova University	N.H.
Kissko, Edward J. A.B. 1964, Georgetown University	Conn.	Korman, James W. A.B. 1965, College of William and Mary	D.C.
Klasic, Donald F. A.B. 1966, Youngstown University	Pa.	Kramer, Bruce S. A.B. 1966, Washington and Lee University	N.J.
Kleman, Richard D. A.B. 1962, Duquesne University	Va.	Kraus, Stephen W. B.S. 1964, Brooklyn College	N.Y.
Klementik, Daniel, Jr. B.S. 1966, Pennsylvania State University	Pa.	Kresman, Marshall E. B.S. 1966, Drexel Institute of Technology	Pa.
Kline, Norman A.B. 1965, Rutgers, the State University	N.J.	Krinsky, Barry H. A.B. 1966, Brooklyn College	N.Y.
Kluttz, John L. A.B. 1964, University of Virginia	Va.	Kuchenberg, Thomas C. B.S. in F.S. 1964, Georgetown University	Wis.
Knight, Louise O. A.B. 1966, Wellesley College	Mo.	Kujawa, Warren P. B.S. 1964, College of William and Mary	N.Y.
Knight, Newel B. B.S. 1965, Brigham Young University	Utah	Kurzbard, Myra S. A.B. 1963, Chatham College	Va.
Knop, John R. A.B. 1966, Indiana University	Ind.	Kustina, Frank D. A.B. 1965, University of Washington	Wash.
Kogan, Jason D. B.S. 1966, Pennsylvania State University	Conn.		

## L

Laird, Michael H. B.S. in Ch.E. 1962, Texas Technological College	La.	Leib, Jeffrey H. A.B. 1964, Brooklyn College	N.Y.
Lambert, David P. B.S. in B.A. 1961, University of Arkansas	Ark.	Leiding, Harold E. A.B. 1962, University of Nebraska	Nebr.
Lambert, Richard A. B.S. 1964, The George Washington University	D.C.	Leo, Michael S. A.B. 1965, Brooklyn College	N.Y.
Lambie, James T. B.S. 1964, Carson-Newman College	Va.	Leonard, John W. A.B. 1964, Cornell University	N.Y.
Landsman, Gary B. B.S. 1965, University of Maryland	Md.	Leonard, William C. A.B. 1964, Morehouse College	D.C.
Lane, Richard S. B.S. 1965, University of Virginia	N.Y.	Leppink, James A. B.S. 1957, University of Wyoming	Va.
Lang, Paul B. B.S. 1961, U.S. Naval Academy	Mich.	Lerman, Robert A. A.B. 1964, Pennsylvania State University	Va.
Lasker, Robert J. B.S. in E.E. 1958, University of Connecticut	N.Y.	Lesser, Wayne L. A.B. 1966, Lafayette College	N.J.
Laskin, Dennis A. A.B. 1964, Ohio State University	W.Va.	Lessy, Roy P., Jr. A.B. 1966, Franklin and Marshall College	Pa.
Latimer, Kenneth A. B.S. 1966, University of Wisconsin	Ill.	Leveen, Barry G. A.B. 1964, Rutgers, the State University	N.J.
Lawless, Barbara J. A.B. 1966, New Mexico Highlands University	N.M.	Levie, Richard A. A.B. 1966, Dickinson College	N.J.
Lawlor, Philip T., Jr. B.C.S. 1963, Seattle University	Md.	Levin, Samuel M. A.B. 1966, The George Washington University	Va.
Lawton, Stephan E. A.B. 1964, University of Oklahoma	Okla.	Levine, Aaron A.B. 1965, University of Maryland	Md.
Leary, Theodore M., Jr. A.B. 1966, Harvard University	Mass.	Lewis, Robert C. A.B. 1965, University of Maryland	Md.
Ledbetter, Andrew D. A.B. 1964, Southwestern at Memphis	Tenn.	Lichtenstein, Marshall H. A.B. 1966, University of North Carolina	Ga.
Leedom, Charles M., Jr. B.S. 1966, Purdue University	Ind.	Light, Ivan I. A.B. 1964, Harpur College	N.Y.
Lefcowitz, Martin B.S. 1964, Carnegie Institute of Technology	N.Y.	Lindquist, William F. A.B. 1961, St. Ambrose College	D.C.
Lefevre, John F. A.B. 1964, Williams College	Ohio	Lines, Farrell L. B.S. 1963, Brigham Young University	N.M.
Lefkowitz, Melvin E. A.B. 1966, University of Maryland	Md.	Linihan, Martin, Jr. A.B. 1963, Hamilton College	N.Y.
Lefkowitz, Michael P. A.B. 1964, Tufts University	N.J.	B.E.E. 1965, Rensselaer Polytechnic Institute	Conn.
Leftwich, Willie L. B.S. in E.E. 1960, Howard University	D.C.	Lipson, Michael H. A.B. 1966, University of Connecticut	N.J.
Lehrkind, Harry T. A.B. 1964, Montana State University	Mont.	Lister, John D. B.M.E. 1963, Rensselaer Polytechnic Institute	N.J.
		Logan, Robert J. B.S. 1966, University of Utah	Va.



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A.B. 1964, Michigan State University		A.B. 1960, A.M. 1961, Emory University	Md.
Long, Stuart J.	D.C.	Lunsford, John K.	
A.B. 1964, College of the Holy Cross		A.B. 1966, Olivet Nazarene College	Va.
Longest, Darrel L.	Md.	Lupo, Raphael V.	
A.B. 1966, Georgetown University		B.E.E. 1963, The George Washington University	Va.
Loss, Ira S.	Conn.	Lurie, Mark I.	
A.B. 1966, University of Connecticut		A.B. 1966, Brown University	N.J.
Lotis, Jon G.	D.C.	Lustbader, David	
B.B.A. 1963, University of Pittsburgh		A.B. 1965, Grinnell College	Calif.
Louiselle, Bruce M.	Va.	Lyman, Edward H.	
A.B. 1965, The George Washington University		A.B. 1965, Sacramento State College	Md.
Lovenheim, David A.	N.Y.	Lynn, Peter J.	
A.B. 1964, Brown University		A.B. 1966, Yale University	
Luber, Michael	Pa.		
A.B. 1966, Pennsylvania State University			

## M

Madden, Raymond H., III	La.	Mayfield, William B.	Ga.
A.B. 1965, Louisiana Polytechnic Institute		A.B. 1966, Yale University	D.C.
Maddex, Robert L.	D.C.	Mazur, Arnold S.	
A.B. 1966, The George Washington University		A.B. 1964, State University of New York at Buffalo	D.C.
Magnone, Joseph R.	Va.	McCabe, Lucy K.	
B.S. 1965, University of Pittsburgh		A.B. 1961, Manhattanville College of the Sacred Heart	Ill.
Malamud, Leonard J.	Md.	McCaffrey, Robert L., Jr.	
A.B. in Govt. 1963, The George Washington University		A.B. 1966, Colgate University	Pa.
Malasky, Alan R.	Pa.	McCaleb, Marlin R.	
B.B.A. 1965, University of Pittsburgh		A.B. 1965, Oberlin College	Pa.
Maloney, Barry C.	N.Y.	McCoy, Craig S.	
B.S. in B.A. 1964, Georgetown University		A.B. 1965, Pennsylvania State University	D.C.
Manoogian, David E.	Va.	McDonald, Charles J.	
A.B. 1966, Dickinson College		A.B. 1961, Oberlin College	Md.
Marcuccio, Claire E.	Md.	McFarland, Wallace B.	
A.B. 1964, University of Maryland		A.B. 1942, Yale University	Vt.
Marcy, Herbert E.	D.C.	McGarry, Michael J.	
A.B. 1966, The George Washington University		A.B. 1964, University of Vermont	Wis.
Markle, George D.	Va.	McGarry, Thomas G.	
A.B. 1964, Washington and Jefferson College		A.B. 1963, Georgetown University	Va.
Marks, Robert S.	N.Y.	McGiehan, Donn	
A.B. 1966, Brown University		B.S. in M.E. 1953, Duke University	N.J.
Marmura, William H.	D.C.	McGrath, William K.	
B.S. 1959, University of Pittsburgh		A.B. 1965, Bethany College	Md.
Marshall, George A.	Va.	McGraw, Marcus P.	
A.B. 1962, Hamline University		A.B. 1964, University of North Carolina	Md.
Marshall, Thomas J.	Mo.	McGreal, Michael J.	
B.S. in B.A. 1964, University of Missouri		B.S. 1959, Iona College	
Martin, Allan A.	N.Y.	M.S. 1960, College of the Holy Cross	Md.
B.B.A. 1966, City College, New York		McLoughlin, Samuel A.	
Martin, David H.	Va.	A.B. 1949, Mexico City College, Mexico	Va.
A.B. 1962, Western Maryland College		McNew, Robert A.	
Martin, Roland E., Jr.	Md.	B.S. 1961, Louisiana State University	Va.
B.S. 1962, University of Maryland		Mead, Charles P., Jr.	N.Y.
Martin, Roy A.	Md.	A.B. 1958, Brown University	
A.B. 1960, North Texas State University		Meade, James F.	Pa.
Martin, Roy I.	N.Y.	B.S. 1961, U.S. Coast Guard Academy	
B.B.A. 1966, Adelphi College		Mechanic, Samuel R.	Pa.
Massey, Fred H., Jr.	D.C.	B.S. 1964, Fairleigh Dickinson University	
A.B. 1965, The George Washington University		Mednick, Jeffrey S.	N.Y.
Mattingly, James V.	Md.	B.S. 1965, Drexel Institute of Technology	
B.B.A. 1966, The George Washington University		Meer, Eugene H.	D.C.
Matyi, Joseph	D.C.	A.B. 1964, St. Lawrence University	
A.B. 1959, Washington and Jefferson College		Megyeri, Laszlo, Jr.	N.Y.
M.P.A. 1960, Syracuse University		A.B. 1963, The George Washington University	
Matz, Timothy B.	D.C.	Meirowitz, Richard W.	
A.B. 1966, University of Virginia		A.B. 1964, University of Vermont	
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Meissner, William C. A.B. 1961, University of Maine	Maine	Moorhead, Thomas L. B.S. 1959, U.S. Military Academy	Ohio
Mellor, Mary Lee G. A.B. 1965, The George Washington University	Conn.	Moran, Joseph E. A.B. 1963, University of Maryland	Md.
Melvin, John A. A.B. 1966, Ohio University	Ohio	Morgan, Bruce H. A.B. 1953, Harvard University	Md.
Menache, Jack A.B. 1963, University of the Americas, Mexico	Mexico	M.S. 1954, California Institute of Technology	
Mendelson, Arline A.B. 1956, Barnard College	Md.	Morgan, DeWitt M. B.S. 1965, Northwestern University	Md.
A.M. 1959, Columbia University		Morgan, Jerold A. B.S. 1956, U.S. Military Academy	Va.
Mendez, Miguel A. A.B. in Govt. 1965, The George Washington University	Texas	M.B.A. 1960, Northwestern University	
Merkel, John C. A.B. 1965, The George Washington University	Wash.	Morley, William E. A.B. 1964, University of Maryland	Del.
Metscher, Joseph G. A.B. 1965, Fairleigh Dickinson College	N.Y.	Morris, George D. B.S. in Ch.E. 1961, University of Kentucky	Ky.
Meyer, Allan F. A.B. 1964, Syracuse University	N.J.	Morris, Samuel W., Jr. A.B. 1966, Harvard University	Pa.
Meyer, Michael S. A.B. 1964, Brandeis University	N.Y.	Morse, Leslie G. A.B. 1964, Barnard College	N.Y.
Meyerholz, John P. B.B.S. 1963, M.B.A. 1964, University of Michigan	Ind.	Moss, Peter J. A.B. 1962, Gettysburg College	Va.
Meyers, Eric B. A.B. 1965, Trinity College, Conn.	N.Y.	Mostow, Kenneth L. A.B. 1963, Oberlin College	D.C.
Miano, Thomas P. A.B. 1966, Providence College	Conn.	Mott, Samuel E. B.Ch.E. 1960, Rensselaer Polytechnic Institute	Va.
Miller, John M. A.B. 1958, Bridgewater College	D.C.	Mountford, Alexander A.M. 1963, University of Edinburgh, Scotland	England
Miller, Pat H. A.B. 1961, Mississippi State University	Va.	Moxham, Douglas G. A.B. 1964, Tufts University	Mass.
A.M. 1963, University of South Carolina		Mudd, Richard J. A.B. 1965, The George Washington University	Md.
Miller, Warren L. A.B. 1966, American University	N.Y.	Mueller, Richard A. A.B. 1965, Municipal University of Omaha	Nebr.
Mills, Edward C. A.B. 1964, The Citadel	N.Y.	Mulcahy, Robert W. B.S. 1963, Boston College	Mass.
Mills, Terence L. A.B. 1964, Syracuse University	N.Y.	Muldoon, Kenneth S. A.B. 1966, Brown University	N.Y.
Milner, Mary A.B. 1965, Vassar College	Va.	Mulrooney, John J. B.S. in E.E. 1963, University of Notre Dame	Minn.
Mooney, Rosemary A. A.B. 1964, Drake University	Iowa	Murphy, William G. A.B. 1962, University of Florida	N.Y.
Moore, Valerie A. A.B. 1965, Manhattanville College of the Sacred Heart	N.Y.	Mylius, Herbert W. A.B. 1960, University of Rochester	Md.
N			
Nadzo, Nicholas S. A.B. 1965, Hamilton College	D.C.	Nelson, Paul G. A.B. 1966, Colgate University	N.Y.
Nakagawa, Togo B.B.A. 1963, University of Hawaii	Hawaii	Nelson, Richard C. A.B. 1966, Clark University	Mass.
Nakamura, Neil T. A.B. 1966, University of Hawaii	Hawaii	Nevins, David C. A.B. 1962, University of Minnesota	Minn.
Nauert, Peter W. B.S. 1965, Marquette University	Ill.	Newendorp, Terry A. B.S. in Ch.E. 1966, Purdue University	Ind.
Neary, John M. B.S. 1966, C.W. Post College	N.J.	Newman, Alan L. B.S. in E.E. 1965, University of Maryland	S.C.
Nedrich, Thomas R. A.B. 1964, Pennsylvania State College, Indiana	Pa.	Newton, Paul W. A.B. 1963, West Virginia Wesleyan College	Va.
Nelson, Howard T. A.B. 1963, Brigham Young University	Va.	Ney, Richard J. A.B. 1964, Duke University	D.C.
Nelson, Kenneth B. A.B. 1965, Wayne State University	Mich.	Nickel, Henry V. A.B. 1965, University of Virginia	Md.



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B.S. 1965, University of Utah		A.B. 1965, Vassar College	Va.
Niro, Raymond P.	Pa.	Norris, Norman L.	
B.S. 1964, University of Pittsburgh		B.S. 1964, Michigan State University	N.Y.
Noble, John	Md.	Nortman, William	Conn.
A.B. 1961, Juniata College		A.B. 1964, Brooklyn College	
Noe, Alphonse R.	N.Y.	Notopoulos, Joseph J.	
B.Ch.E. 1962, Villanova University		A.B. 1962, Johns Hopkins University	

## O

Oblon, Norman F.	Pa.	O'Leary, Barbara A.	D.C.
B.S. in Ch.E. 1964, Drexel Institute of Technology		A.B. 1962, Pembroke College	Pa.
O'Brien, Frederick J.	Hawaii	Olexy, Peter D.	
A.B. 1964, University of Hawaii		B.S. 1965, Pennsylvania State University	N.Y.
O'Connell, Daniel M., Jr.	N.Y.	Ollman, Robert C.	
A.B. 1964, University of Virginia		A.B. 1966, Colgate University	Va.
Offen, Neil H.	N.Y.	Olsen, James D.	
A.B. 1965, Queens College, N.Y.		B.S. 1960, University of Oklahoma	D.C.
Ogden, Terry L.	N.Y.	Olson, Douglas K.	Ohio
A.B. 1964, Syracuse University		Oppmann, T. Rodney	
Oggel, Stephen P.	Ill.	A.B. 1965, Princeton University	Va.
A.B. 1964, Vanderbilt University		Orman, John	
O'Keeffe, John J.	Conn.	B.S. in I.E. 1963, University of Florida	Pa.
A.B. 1965, Fairfield University		Osborn, William C.	
Olds, James E.	Va.	A.B. 1966, Princeton University	
B.S. in M.E. 1960, University of North Dakota			

## P

Page, Max R.	Pa.	Petilon, Jean C.	N.Y.
B.S. 1965, Drexel Institute of Technology		A.B. 1964, Pennsylvania State University	Va.
Palmer, Mark L.	N.Y.	Phelps, Edwin L.	
A.B. 1964, Brooklyn College		B.S. 1962, Illinois Wesleyan University	Va.
Palmer, Thomas C.	D.C.	Phelps, Fred A.	
B.S. 1964, Howard University		B.S. 1966, Pennsylvania State University	Va.
Pansic, Andrew, Jr.	D.C.	Phillips, James H.	Ohio
B.S. 1963, Northwestern University		B.S. in E.E. 1960, Rose Polytechnic Institute	
Pappas, George	Ill.	Phillips, James H.	N.J.
B.S. 1966, Carroll College, Wis.		B.S. 1965, Ohio State University	
Parachini, Thomas G.	N.J.	Pike, Kenneth R.	R.I.
A.B. 1966, Michigan State University		A.B. 1966, Cornell University	
Parkhurst, Roger W.	Ind.	Pirraglia, Robert K.	N.Y.
B.S. 1965, Purdue University		A.B. 1965, Providence College	
Parley, Louis I.	N.Y.	Planty, Mary A.	Va.
A.B. 1966, City College, New York		A.B. 1964, Smith College	
Parrett, Sherman O.	Ohio	Polaha, Jerome M.	
B.S. 1965, University of Cincinnati		A.B. 1964, University of Nevada	N.Y.
Pascal, Lawrence J.	N.Y.	Poltarak, William J.	D.C.
A.B. 1964, St. Anselm's College		A.B. 1966, Pennsylvania State University	
Pashkoff, Lionel E.	Texas	Polyzoides, Alexandra P.	Va.
A.B. 1965, University of Maryland		A.B. 1964, Bryn Mawr College	
Pass, Robert N.	R.I.	Potter, Alan L.	England
A.B. 1966, Brown University		B.S. 1951, Virginia Polytechnic Institute	
Patt, Paris J.	N.J.	Pretty, Laurence H.	Mo.
A.B. 1965, Washington and Jefferson College		B.S. 1965, University of London	
Patton, Robert J., Jr.	Texas	Price, Donald D.	Mo.
A.B. 1965, Duke University		B.S. 1965, University of Missouri	
Pennell, David H.	Calif.	Proffer, Lanny M.	Va.
Ed.B. 1960, University of Alaska		A.B. 1964, Southern Missouri State College	
Penrod, James N.	Vt.	Puglise, Angelo S.	N.Y.
B.S. 1964, U.S. Naval Academy		B.S. 1959, University of Maryland	
Perry, James P.	Va.	Pursley, Thomas A., III	Calif.
B.S. 1964, The Citadel		A.B. 1966, Colgate University	
Peters, Mary E.	D.C.	Purvis, Barbara A.	D.C.
Ed.B. 1966, Rhode Island College		A.B. 1963, University of California	
Peterson, David A.	Calif.	Pyles, John C., III	
A.B. 1964, Occidental College		A.B. 1965, M.B.A. 1966, Dartmouth College	



## Q

Quarton, Charles E.  
B.S. 1966, Northwestern University

Ill.

Quintiere, Gary G.  
A.B. 1966, Lafayette College

N.J.

## R

Rabben, Robert G.  
A.B. 1961, Temple University

Va.

Roberts, Robert E.  
A.B. 1964, University of Alabama

Ala.

Racines, Audrey G.  
A.B. 1965, The George Washington University

D.C.

Robinson, Arnold J.  
A.B. 1964, University of Vermont

Md.

Ragsdale, Gerald H., Jr.  
A.B. 1966, University of Hawaii

D.C.

Robinson, Douglas G.  
A.B. 1965, University of Washington

Va.

Ramey, Carl R.  
A.B. 1962, Marietta College

Md.

Rockman, Andrew M.  
A.B. 1964, Rutgers, the State University

N.J.

Raskin, Samuel R.  
B.S. 1961, City College, New York

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Rockwell, Frank A.  
B.S. 1958, University of California

Va.

Ratzlaff, James W.  
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Rogers, William N.  
A.B. in Govt. 1965, The George Washington University

Md.

Raymond, Kevin M.  
B.S. 1963, Siena College

N.Y.

Rogol, Martin H.  
A.B. 1966, University of Cincinnati

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M.P.A. 1964, State University of New York at Albany

Conn.

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Regan, Elizabeth A.  
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Hawaii

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B.S. in B.A. 1964, Georgetown University

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Rego, Anson O.  
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D.C.

Romig, Michael J.  
A.B. 1964, The George Washington University

Md.

Reising, Gregory S.  
A.B. 1964, Indiana University

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Rosen, Harold I.  
B.B.A. 1964, The George Washington University

Pa.

Reiter, Neil S.  
A.B. 1964, Brooklyn College

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Rosenbaum, James D.  
A.B. 1964, American University

Md.

Reisman, Edwin H.  
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Rosenbaum, Paul A.  
B.S. 1964, Springfield College

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Resnick, Michael A.  
A.B. 1965, Brooklyn College

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Rosenberg, Charles M.  
A.B. 1965, Washington and Jefferson College

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Resnik, Richard M.  
A.B. 1966, Fairleigh Dickinson University

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Revesz, Joseph M.  
B.S. in E.E. 1965, Newark College of Engineering

Va.

Rosenberg, Michael B.  
A.B. 1966, Brooklyn College

N.Y.

Rice, Janet E.  
A.B. 1964, Wheaton College, Ill.

Pa.

Rosenfeld, David R.  
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N.Y.

Rice, Michael W.  
A.B. 1965, Mount St. Mary's College, Md.

Va.

Rosenkrantz, Rita R.  
B.S. in B.A. 1954, Ohio State University

Md.

Richardson, Enos, Jr.  
A.B. 1957, Harvard University

N.J.

Rosenthal, Joel B.  
A.B. 1965, University of Massachusetts

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Richman, Stephen C.  
B.S. 1965, State University of New York at Buffalo

Md.

Ross, Steven L.  
A.B. 1964, Johns Hopkins University

N.Y.

Ridien, Julian L.  
A.B. 1964, Anderson College, Ind.

Conn.

Rowe, John R.  
A.B. 1964, University of Idaho

Idaho

Riley, David P.  
A.B. 1964, Middlebury College

D.C.

Roy, Howard P.  
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N.Y.

Ririe, James A.  
B.S. 1964, Brigham Young University

Md.

Royer, Stephen C.  
A.B. 1966, The George Washington University

Mich.

Rivers, Hugh F.  
A.B. 1966, Catholic University of America

Nev.

Rudolph, Michael  
B.S. 1961, Polytechnic Institute of Brooklyn

N.Y.

Robb, John D.  
A.B. 1964, University of Nevada

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Russell, Percy H., Jr.  
A.B. 1963, Dartmouth College

Md.

Roberts, Joseph R.  
A.B. 1962, Pennsylvania State University

Md.

Rutstein, David  
A.B. 1966, University of Pennsylvania

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Roberts, Neil E.  
B.S. in E.E. 1964, University of Maryland

Sachs, Jeremy  
A.B. 1964, University of Maryland

Md.

Santmire, Glenn F.  
A.B. 1965, New York University

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Sales, Milton S.  
B.S. in M.E. 1964, Purdue University

Md.

Sapadin, David A.  
A.B. 1965, Brooklyn College

N.Y.

Sand, Dolph D.  
B.S. 1965, Ohio State University

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Vt.



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B.S. 1963, Providence College		B.S. 1964, Drexel Institute of Technology	Idaho
Schade, Dewey D.	Mo.	Seitz, Richard A.	Md.
B.J. 1964, University of Missouri		A.B. 1964, Washington State University	Md.
Schainker, William A.	Mo.	Selman, Hulen R.	Md.
B.S. in B.A. 1966, Washington University		A.B. 1964, University of Maryland	Va.
Schaller, James P.	Pa.	Setta, James V.	Va.
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Schanker, Charles K.	D.C.	Shadwick, Gerald L.	N.Y.
B.B.A. 1966, The George Washington University		B.S. 1954, Kansas State University of Agriculture and Applied Science	N.Y.
Schaum, Michael P.	N.Y.	Shaljian, Ronald H.	N.Y.
A.B. 1966, University of Michigan		A.B. 1965, Franklin and Marshall College	N.J.
Scheer, Myles R.	N.J.	Shapiro, Elliott C.	N.J.
A.B. 1966, Rutgers, the State University		A.B. 1966, Syracuse University	Pa.
Scheraga, Ronald G.	N.J.	Shapiro, Robert P.	Ohio
A.B. in Govt. 1965, The George Washington University		B.S. 1964, New York University	N.Y.
Schiff, Richard B.	Va.	Shay, Edward F.	N.Y.
A.B. 1966, University of Michigan		A.B. 1966, Colgate University	D.C.
Schlieman, Walter C., Jr.	N.Y.	Shayne, Stanley H.	Pa.
A.B. 1961, Dartmouth College		B.S. 1965, Miami University	N.Y.
Schmelzer, Henry L.	Mass.	Shenbein, Sol	D.C.
A.B. 1955, University of Maine		B.E.E. 1966, City College, New York	Pa.
Schneider, Jeffrey H.	N.Y.	Shelby, Diane	N.Y.
A.B. 1966, New York University		A.B. 1964, Howard University	N.Y.
Schneider, Jerold I.	Va.	Shenk, John F.	Pa.
B.S. in E.E. 1964, Newark College of Engineering		A.B. 1964, University of Pennsylvania	N.Y.
Schore, Jack J.	N.Y.	Sherwood, Wallace W.	Pa.
A.B. 1965, The George Washington University		A.B. 1966, St. Vincent College	D.C.
Schreiber, David E.	N.J.	Sherzer, Harvey G.	N.Y.
A.B. 1966, University of Virginia		A.B. 1965, Temple University	Va.
Schreiber, Lenore	D.C.	Shuler, Willis P.	N.Y.
A.B. 1964, The George Washington University		B.S. in E.E., A.B. 1962, Rutgers, the State University	Pa.
Schroeder, Richard W.	Wis.	Siber, Victor	N.Y.
B.S. 1966, Wisconsin State University		B.E.E. 1964, Pratt Institute	Mass.
Schuenman, Forest R.	Va.	M.S. 1966, Rensselaer Polytechnic Institute	N.Y.
B.S. 1964, University of Utah		Silber, Barry	N.Y.
Schumacher, Donald R.	N.Y.	A.B. 1965, University of Maryland	N.Y.
A.B. 1965, Colgate University		Silver, Richard D.	N.Y.
Schundler, Peter O.	N.J.	A.B. 1964, Boston University	N.Y.
A.B. 1965, Princeton University		Silverman, Joel A.	N.Y.
Schwartz, Daniel C.	D.C.	B.E. 1965, City College, New York	Utah
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Schwartz, Edward	Md.	B.S. 1955, Utah State University of Agriculture and Applied Science	N.Y.
B.S. 1942, DePaul University		Simons, Frank S.	Conn.
Ph.D. 1954, Northwestern University		A.B. 1966, University of Colorado	N.Y.
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B.S. 1964, Queens College, N.Y.		A.B. 1965, Idaho State University	N.Y.
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B.E.E. 1955, Cooper Union		A.B. 1964, Franklin and Marshall College	Conn.
M.S. 1957, University of California at Los Angeles		Singer, Linda	N.Y.
Schwartzbach, M. Gerald	Pa.	A.B. 1963, Radcliffe College	Md.
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B.S. 1964, University of Pennsylvania		A.B. 1964, Yale University	
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Smith, Robert C.	D.C.	Stern, Ronald J.	N.Y.
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Wenzel, John R. A.B. 1965, The George Washington University	Md.	Williams, Wade S. A.B. 1963, University of the South	Va.
Wertheimer, William L. A.B. 1964, Lafayette College	N.J.	Williamson, Thomas F. A.B. 1962, Yale University	Pa.
Wesley, Roger C. B.S. 1962, University of Southern California	Calif.	Wilson, David I. A.B. 1963, Southern Illinois University	Mo.
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White, Glenn A. A.B. 1966, DePaul University	Ohio	Wisnovsky, George A. A.B. 1965, Seton Hall University	N.J.
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Whiteside, Tyson W. A.B. 1966, University of Kansas	Kans.	Wolf, John F., Jr. A.B. 1964, Georgetown University	Md.
Whitman, Lynn R. A.B. 1965, University of Colorado	Md.	Wolf, Roger C. A.B. 1962, Harvard University	Ohio
Widlitz, Lynne Joyce B.S. 1962, Miami University	Ohio	Wolff, Sue A. A.B. 1961, Trinity College, D.C.	Ohio
Wiegand, Roger C. A.B. 1963, Harvard University	Pa.	Wolfson, Sheldon A.B. 1964, Hunter College	N.Y.
Wigert, John W., Jr. B.S.E. 1965, Princeton University	S.C.	Wood, Judith A. A.B. 1966, Mt. Holyoke College	N.J.
Wilkins, Stanley O., Jr. A.B. 1963, University of Pennsylvania	N.J.	Woods, Michael L. A.B. 1964, Texas Technological College	Texas
Wilks, Van C. B.S. 1963, University of Missouri	Mo.	Wray, Henry R. A.B. 1965, Washington and Jefferson College	Pa.
Willard, Sherwood S. A.B. 1966, University of Virginia	Conn.	Wright, James R. B.S. 1966, Ohio State University	Ohio
Willie, Paul F. B.S. 1964, Le Moyne College	N.Y.	Wright, Merle G. A.B. 1961, University of New Hampshire	Va.
Y			
Yarrington, Hugh J. A.B. 1964, Randolph-Macon College	Md.	Yuen, Jann L. A.B. 1958, University of Hawaii	Hawaii
Yochelson, Arnold L. B.S. 1963, Pennsylvania State University	D.C.	Yuter, Arthur G. B.B.A. 1965, City College, New York	N.Y.
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Z			
Zablocki, Michael A. A.B. 1965, Brooklyn College	N.Y.	Zigman, Louis M. B.S. 1966, New York University	N.Y.
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Zeh, Geoffrey N. A.B. 1965, Rutgers, the State University	N.J.	Zimmers, Neal F., Jr. A.B. 1964, Denison University	Ohio
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A.B. 1964, University of Virginia		Greece	Va.
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		Havana, Cuba	

## B

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B.S. 1961, J.D. 1964, University of Nebraska		LL.B. 1966, Georgetown University	Md.
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LL.B. 1963, The George Washington		B.S. in F.S. 1933, LL.B. 1939, LL.M. 1941,	
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 A.B. 1961, Cornell University  
 LL.B. 1964, Boston University



Marlar, Richard L. B.S. 1956, University of Oklahoma LL.B. 1963, American University	Va.	Miller, John M. A.B. 1959, LL.B. 1962, West Virginia University	W.Va.
Martin, Charles E. B.S. 1951, U.S. Coast Guard Academy J.D. 1958, LL.M. 1966, The George Washington University	Va.	Misher, Sheldon E. B.S. 1958, Hofstra University LL.B. 1965, Brooklyn Law School	Md.
Mathews, Craig A.B. 1951, Yale University LL.B. 1954, Georgetown University	Md.	Monzack, Melvyn I. B.S. 1962, University of Rhode Island LL.B. 1965, The George Washington University	R.I.
McElligott, Paul J. A.B. 1959, College of the Holy Cross LL.B. 1962, Georgetown University	Va.	Morganstern, Allen R. B.S. in E.E. 1962, J.D. 1965, Washington University	Mo.
McGlynn, Joseph H. B.M.E. 1962, LL.B. 1965, Villanova University	D.C.	Moss, Stephen E. B.B.A. 1962, Baldwin-Wallace College LL.B. 1965, The George Washington University	D.C.
McGuirl, James F. LL.B. 1965, DePaul University	D.C.	Murray, Brenda P. A.B. 1960, D'Youville College LL.B. 1963, Boston University	D.C.
McGunnigle, George F., Jr. A.B. 1963, Boston College LL.B. 1966, Georgetown University	Conn.	Murray, Stephen J. A.B. 1963, Brown University LL.B. 1966, Harvard University	N.Y.
McKeever, Benjamin B. A.B. 1958, Harvard University LL.B. 1965, Boston University	Mass.		
Millard, James J. B.S. 1953, Georgetown University LL.B. 1964, The George Washington University	Va.		
N			
Nerenberg, Roy B.S. 1959, University of Pennsylvania LL.B. 1962, Temple University	Md.	Nicholas, Talbot J. B.S. 1954, Miami University LL.B. 1956, Columbia University	Va.
Neuhauser, Nivea R. Doctor en Derecho y Ciencias Sociales 1957, University of Uruguay	Va.	Nunley, Spencer J. A.B. 1960, Columbia University J.D. 1963, Indiana University	Ind.
Newman, Clinton I. A.B. 1951, Pennsylvania State University LL.B. 1957, The George Washington University	Pa.		
O			
O'Donnell, Francis T. LL.B. 1939, American University	Md.	O'Neill, Daniel R. A.B. 1961, College of the Holy Cross J.D. 1966, St. Louis University	Mo.
O'Driscoll, Cornelius J. B.S. 1957, Boston College LL.B. 1965, Suffolk University	Mass.	Ostby, John L. A.B. 1941, St. Olaf College LL.B. 1948, University of Minnesota LL.M. 1964, The George Washington University	Minn.
Olrich, Roger C. B.B.A. 1961, LL.B. 1964, University of Michigan	D.C.		
P			
Palotai, Olga C. Diploma in Jurisprudence 1951, Eotvos Lorand University, Hungary M.S. 1962, University of North Carolina	Md.	Perlowski, Stanley T. A.B. 1962, LL.B. 1965, Seton Hall University	N.J.
Parsons, Gerald P. B.S. 1961, Oregon State University LL.B. 1966, University of San Francisco	Calif.	Pitchenik, David E. B.E.E. 1962, University of Virginia LL.B. 1965, The George Washington University	N.Y.
Partington, Donald H. A.B. 1961, LL.B. 1964, Washington and Lee University	Md.	Prince, Marion R. B.S. 1963, University of Illinois LL.B. 1966, The George Washington University	Ind.
Perazich, John G. A.B. 1963, Oberlin College LL.B. 1967, The George Washington University	D.C.		



## R

Raymond, Odette J. A.B. 1958, University of Baghdad, Iraq	D.C.	Renner, Edward H. B.S. 1962, J.D. 1965, Washington University	Va.
Reale, Ulrico LL.B. 1963, John Marshall Law School LL.M. 1966, The George Washington University	Ill.	Reynolds, Sherin V. A.B. 1960, Harvard University LL.B. 1963, Boston University	Va.
Reese, John H. B.B.A., LL.B. 1954, Southern Methodist University LL.M. 1965, The George Washington University	Texas	Rosenberg, Stephen B. A.B. 1963, University of Rhode Island LL.B. 1966, Georgetown University	Va.
		Ryan, David L. A.B. 1962, J.D. 1966, Washburn University of Topeka	Kans.

## S

Sachs, Barbara F. B.S. 1956, LL.B. 1963, University of Wisconsin	Md.	Shaw, Russell C. B.S. in B.A. 1962, LL.B. 1965, Ohio State University	Ohio
Sandler, Ronald F. B.S. 1959, Pennsylvania State University LL.B. 1963, Temple University	Pa.	Shinnick, Lawrence E. B.S. 1962, Carnegie Institute of Technology LL.B. 1965, University of Notre Dame	Fla.
Santman, Leon D. B.S. 1952, U.S. Coast Guard Academy LL.B. 1963, University of Houston	Md.	Smallwood, William E. B.S. 1960, Bradley University LL.B. 1963, The George Washington University	Md.
Sarisky, Joseph L. A.B. 1958, American University LL.B. 1960, Georgetown University	Va.	Somers, Edward W. B.E. 1953, M.S. 1955, Johns Hopkins University	Md.
Scallan, Eugene LL.B. 1950, Louisiana State University	Md.	LL.B. 1967, The George Washington University	
Scully, Richard A. B.S. 1963, College of the Holy Cross LL.B. 1966, Georgetown University	Md.	Sonde, Theodore I. A.B. 1961, City College, New York LL.B. 1964, New York University	Md.
Sexton, Joseph S. A.B. 1962, LL.B. 1965, Harvard University	D.C.	Suchanek, Leonard B.S. 1958, LL.B. 1962, Creighton University	Va.
Shallal, Suham S. LL.B. 1959, University of Baghdad, Iraq	Iraq	LL.M. 1967, The George Washington University	
Shapiro, Charles E. B.S. 1960, University of Maryland LL.B. 1963, The George Washington University	D.C.		

## T

Tankel, Jerome K. A.B. 1957, University of Illinois LL.B. 1963, Harvard University	Va.	Thorpe, Norman R. A.B. 1956, LL.B. 1958, University of Illinois	Ill.
Thibodeau, Joseph A.B. 1963, College of the Holy Cross J.D. 1966, University of Detroit	Mich.	Tsuboi, Yutaka B.S. 1955, Shizuoka University, Japan LL.M. 1957, Meji University, Japan	Japan
Thompson, Garland P. LL.B. 1956, The George Washington University	Va.	Turtle, Robert H. B.S. 1959, Queens College, N.Y. LL.B. 1962, Columbia University	Va.

## U

Urbach, Herbert S. A.B. 1958, Middlebury College LL.B. 1961, University of Virginia	Va.
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## V

Van Hook, Ray M. A.B. 1947, Centre College of Kentucky LL.B. 1954, John Marshall Law School	Va.
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## W

Wagoner, Thomas A. B.S. 1960, LL.B. 1963, University of Nebraska	Nebr.	Williamson, James A. LL.B. 1952, Boston University	Md.
Walker, Sidney J. B.S. 1942, Eureka College	Va.	Wise, Thomas D. A.B. 1961, LL.B. 1964, University of South Carolina	N.C.
LL.B. 1949, University of Miami		Wolff, William C. B.E.E. 1948, Rensselaer Polytechnic Institute	Va.
LL.M. 1958, The George Washington University		M.B.A. 1949, University of Pennsylvania	
Watson, Matthew S. A.B., A.M. 1962, Johns Hopkins University	Md.	LL.B. 1957, Seton Hall University	
LL.B. 1965, New York University		Woodruff, Frederick, Jr. A.B. 1959, Colgate University	Va.
Weiner, David F. A.B. 1961, University of Pennsylvania	D.C.	LL.B. 1962, Syracuse University	
J.D. 1965, Western Reserve University		Wright, John W. LL.B. 1950, University of Miami	D.C.
West, Luther C. A.B. 1948, Birmingham-Southern College	Ala.	Wyss, Garrett N. A.B. 1957, University of Notre Dame	Ind.
LL.B. 1950, The George Washington University		LL.B. 1962, Catholic University of America	

## Y

Yost, Raymond A. A.B. 1959, Brown University	N.Y.
LL.B. 1962, University of Michigan	

## Institutions in Which Law Center Students Earned Degrees \*

Adelphi College .....	1	Bridgewater College .....	1
Alabama, University of .....	2	Brigham Young University .....	17
Alaska, University of .....	1	Brooklyn College .....	27
Alfred University .....	2	Brooklyn Law School .....	1
Allegheny College .....	1	Brooklyn, Polytechnic Institute of..	3
American University .....	27	Brown University .....	11
Americas, University of the, Mexico .....	1	Bryn Mawr College .....	1
Amherst College .....	2	Bucknell University .....	7
Anderson College, Ind. ....	1	C.W. Post College .....	1
Ankara, University of, Turkey .....	1	Cairo University, Egypt .....	1
Arizona State University .....	1	California Institute of Technology..	3
Arizona, University of .....	2	California State College .....	1
Arkansas, University of .....	3	California, University of .....	9
Athens University, Greece .....	1	California, University of, at Los Angeles .....	1
Baghdad, University of, Iraq .....	3	Carleton College .....	1
Baldwin-Wallace College .....	1	Carnegie Institute of Technology...	3
Barnard College .....	3	Carroll College, Wis. ....	1
Beloit College .....	1	Carson-Newman College .....	1
Birmingham-Southern College .....	1	Case Institute of Technology .....	2
Bethany College .....	1	Catholic University of America ....	8
Boston College .....	6	Catholic University of Louvain, Belgium .....	1
Boston University .....	14	Centre College of Kentucky .....	1
Bowling Green State University ....	4	Chatham College .....	1
Bradley University .....	1	Chicago, University of .....	1
Brandeis University .....	2	Cincinnati, University of .....	4
Brenau College .....	1	Citadel .....	5
Bridgeport, University of .....	1		

\* Figures represent students registered spring semester 1967.



Claremont Men's College .....	3	Harpur College .....	3
Clark University .....	1	Hartford, University of .....	1
Clarkson College of Technology ....	1	Hartwick College .....	1
Clemson University .....	1	Harvard University .....	20
Coe College .....	1	Havana, University of, Cuba .....	2
Colgate University .....	11	Hawaii, University of .....	9
Colorado College .....	1	Hobart College .....	1
Colorado, University of .....	4	Hofstra University .....	3
Columbia University .....	9	Holy Cross, College of the .....	9
Connecticut College .....	1	Houston, University of .....	1
Connecticut, University of .....	4	Howard University .....	4
Cooper Union .....	2	Hunter College .....	2
Cornell University .....	14	Idaho, College of .....	2
Creighton University .....	2	Idaho State University .....	2
Dartmouth College .....	9	Idaho, University of .....	2
Dayton, University of .....	2	Illinois, University of .....	8
Delaware, University of .....	2	Illinois Wesleyan University .....	1
Denison University .....	3	Indiana University .....	6
Denver, University of .....	1	Iona College .....	2
DePaul University .....	3	Iowa State University of Science	
DePauw University .....	1	and Technology .....	1
Detroit College of Law .....	2	Iowa, University of .....	2
Detroit, University of .....	2	John Carroll University .....	1
Dickinson College .....	4	John Marshall Law School .....	2
Drake University .....	1	Johns Hopkins University .....	7
Drew University .....	1	Johs Hopkins University .....	2
Drexel Institute of Technology .....	10	Juniata College .....	1
Duke University .....	9	Kalamazoo College .....	1
Duquesne University .....	1	Kansas State Teachers College .....	
D'Youville College .....	2	Kansas State University of	
East Tennessee State College .....	1	Agriculture and Applied Science	3
Eastern Kentucky State College ....	1	Kansas, University of .....	5
Edinburgh, University of, Scotland	1	Kentucky, University of .....	2
Elizabethtown College .....	1	Kings College, Pa. ....	1
Emory University .....	1	Lafayette College .....	4
Eotvos Lorand University, Hungary	4	Lake Forest College .....	1
Eureka College .....	1	LaSalle College .....	3
Fairfield University .....	1	Lawrence University .....	2
Fairleigh Dickinson University .....	2	Lebanon Valley College .....	1
Florida State University .....	4	Lehigh University .....	3
Florida, University of .....	1	Le Moyne College .....	2
Fordham University .....	6	Le Moyne College .....	1
Franklin and Marshall College .....	3	London, University of .....	1
Fresno State College .....	5	Louisiana Polytechnic Institute .....	3
Gannon College .....	1	Louisiana State University .....	1
General Motors Institute .....	1	Loyola University, La. ....	1
George Washington University .....	124	MacMurray College .....	1
Georgetown University .....	37	Maine, University of .....	4
Georgia Institute of Technology ....	3	Manchester, University of, England	1
Georgia, University of .....	1	Manhattanville College of the	2
Gettysburg College .....	5	Sacred Heart .....	1
Gonzaga University .....	1	Marietta College .....	4
Goucher College .....	2	Marquette University .....	3
Grinnell College .....	2	Marshall University .....	46
Grove City College .....	1	Maryland, University of .....	
Hamilton College .....	2	Massachusetts Institute of	
Hamline University .....	1	Technology .....	2
		Massachusetts, University of .....	6
		McGill University, Canada .....	2



Meji University, Japan .....	1	Pennsylvania State College, Indiana .....	1
Mexico City College, Mexico .....	1	Pennsylvania State University .....	32
Miami University .....	9	Pennsylvania, University of .....	22
Miami, University of .....	8	Phillips University .....	1
Michigan State University .....	11	Pittsburgh, University of .....	9
Michigan Technological University .....	1	Pomona College .....	1
Michigan, University of .....	30	Pratt Institute .....	2
Middlebury College .....	1	Princeton University .....	12
Minnesota, University of .....	4	Providence College .....	4
Mississippi State University .....	1	Puerto Rico, University of .....	1
Mississippi, University of .....	2	Purdue University .....	13
Missouri, University of .....	5	Queens College, N. Y. ....	8
Montana State University .....	4	Radcliffe College .....	1
Montreal, University of, Canada....	1	Randolph-Macon College .....	1
Morehouse College .....	1	Rensselaer Polytechnic Institute ...	9
Morningside College .....	1	Rhode Island College .....	1
Mount Holyoke College .....	6	Rhode Island, University of .....	3
Mount St. Mary's College, Md. ....	3	Rice University .....	1
Muhlenberg College .....	1	Rochester Institute of Technology..	1
Nebraska, University of .....	3	Rochester, University of .....	7
Nevada, University of .....	5	Rollins College .....	1
New Hampshire, University of .....	3	Rose Polytechnic Institute .....	1
New Mexico Highlands University .....	4	Rutgers, the State University .....	14
New Mexico State University .....	1	Sacramento State College .....	1
New Mexico, University of .....	1	St. Ambrose College .....	2
New York, City College .....	19	St. Anselm's College .....	3
New York, State University of, .....		St. Bernardine of Siena College ....	1
at Albany .....	1	St. John's University, Minn. ....	1
New York, State University of, .....		St. John's University, N. Y. ....	2
at Buffalo .....	3	St. Lawrence University .....	2
New York University .....	23	St. Louis University .....	2
Newark College of Engineering ....	3	St. Mary's Seminary and .....	
North Carolina State University ....	2	University .....	1
North Carolina, University of .....	9	St. Olaf College .....	1
North Dakota State University .....	1	St. Vincent College .....	1
North Dakota, University of .....	3	San Beda College, Philippines .....	1
North Park College .....	1	San Diego State College .....	2
North Texas State University .....	2	San Francisco, University of .....	2
Northeastern University .....	1	Santo Tomas, University of, .....	
Northern State College .....	1	Philippines .....	1
Northwestern University .....	15	Seoul National University, Korea..	1
Notre Dame, University of .....	13	Seton Hall University .....	5
Oberlin College .....	5	Shizuoka University, Japan .....	1
Occidental College .....	2	Sienna College .....	1
Ohio Northern University .....	1	Skidmore College .....	1
Ohio State University .....	10	Smith College .....	3
Ohio University .....	6	South Carolina, University of .....	5
Ohio Wesleyan University .....	1	South Dakota State College .....	1
Oklahoma Baptist University .....	1	South, University of the .....	2
Oklahoma State University of .....		Southern California, University of .....	4
Agriculture and Applied Science .....	1	Southern Illinois University .....	1
Oklahoma, University of .....	6	Southern Methodist University .....	3
Olivet Nazarene College .....	1	Southern Missouri State College ....	1
Omaha, Municipal University of ...	1	Southwestern Louisiana, University .....	
Oregon State University .....	2	of .....	1
Oregon, University of .....	3	Southwestern at Memphis .....	2
Pembroke College .....	2	Southwestern University, Calif. ....	1

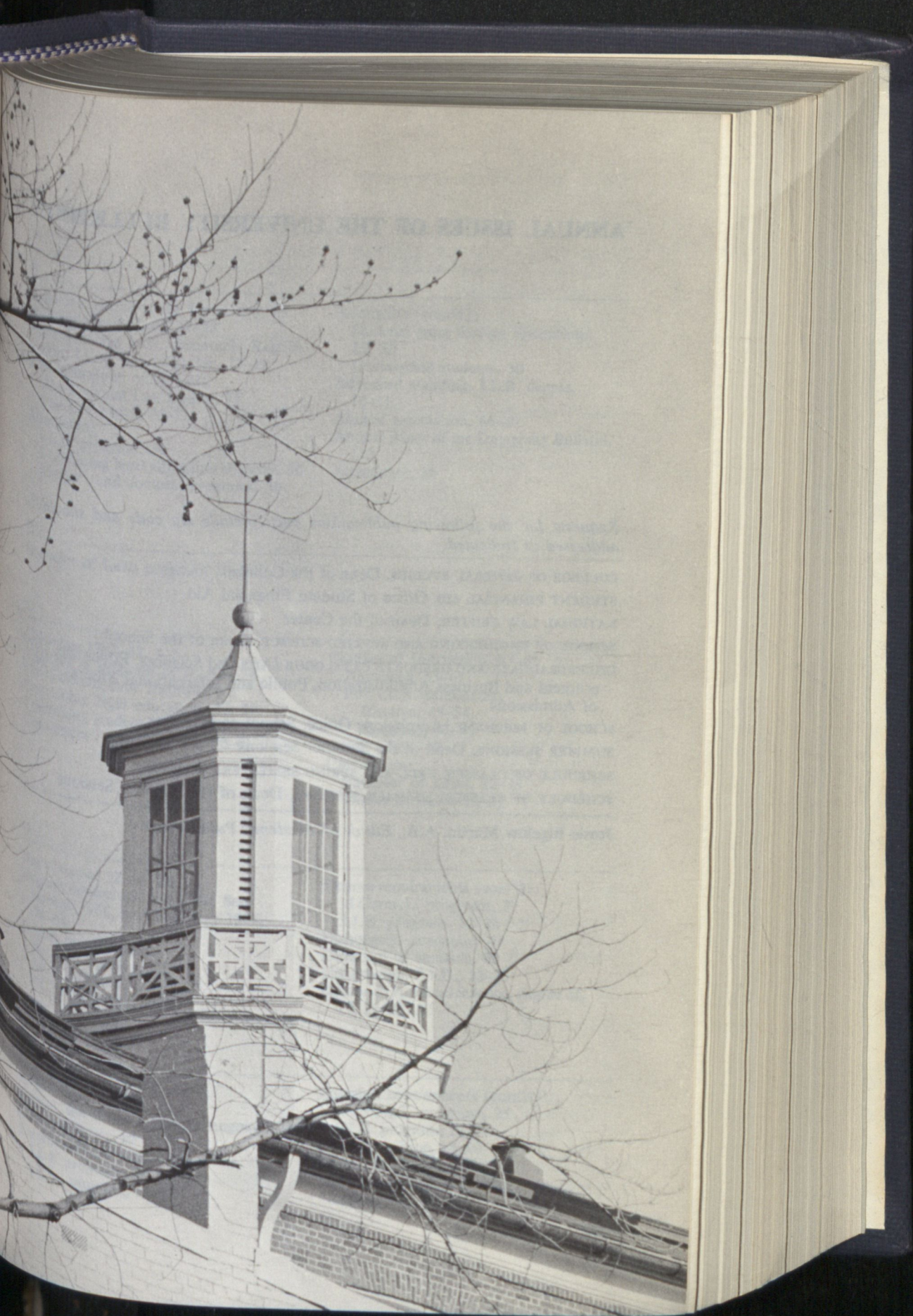


Springfield College .....	1	Washburn University of Topeka ....	1
Stanford University .....	5	Washington College .....	10
Stetson University .....	1	Washington and Jefferson College..	5
Suffolk University .....	1	Washington and Lee University ....	2
Syracuse University .....	13	Washington State University .....	6
Temple University .....	6	Washington University .....	6
Texas A&M University .....	1	Washington, University of .....	2
Texas Technological College .....	2	Wayne State University .....	3
Texas, University of .....	1	Wellesley College .....	3
Toledo, University of .....	2	Wesleyan University .....	3
Trinity College, Conn. ....	5	West Virginia University .....	1
Trinity College, D. C. ....	2	West Virginia Wesleyan College ....	1
Tufts University .....	4	Western Maryland College .....	2
Tulane University of Louisiana .....	3	Western Michigan University .....	3
U. S. Air Force Academy .....	2	Western Reserve University .....	1
U. S. Coast Guard Academy .....	9	Wheaton College, Ill. ....	1
U. S. Military Academy .....	5	Whitman College .....	1
U. S. Naval Academy .....	11	Wichita State University .....	1
Uruguay, University of .....	1	Wilkes College .....	6
Utah State University of Agriculture and Applied Science	7	William and Mary, College of .....	1
Utah, University of .....	7	William Smith College .....	1
Vanderbilt University .....	3	Williams College .....	2
Vassar College .....	4	Wisconsin State University .....	5
Vermont, University of .....	9	Wisconsin, University of .....	2
Villanova University .....	5	Wyoming, University of .....	15
Virginia Polytechnic Institute .....	2	Yale University .....	1
Virginia, University of .....	19	Youngstown University .....	

### Summary of Registration Fall Semester 1966-67

	1st Year	2d Year	3d Year	4th Year	Graduate
Day .....	271	255	236	—	31
Evening .....	111	86	95	152	144
Total: 1,381					







## ANNUAL ISSUES OF THE UNIVERSITY BULLETIN

*Requests for the following publications must include zip code and should be addressed as indicated.*

COLLEGE OF GENERAL STUDIES, Dean of the College

STUDENT FINANCIAL AID, Office of Student Financial Aid

NATIONAL LAW CENTER, Dean of the Center

SCHOOL OF ENGINEERING AND APPLIED SCIENCE, Dean of the School

UNDERGRADUATE AND GRADUATE CATALOGUE (Arts and Sciences, Education, Government and Business Administration, Public and International Affairs), Office of Admissions

SCHOOL OF MEDICINE, Admissions Office, School of Medicine

SUMMER SESSIONS, Dean of the Summer Sessions

SCHEDULE OF CLASSES: FALL AND SPRING SEMESTERS, Registrar

SCHEDULE OF CLASSES: SUMMER SESSIONS, Dean of the Summer Sessions

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Jessie Bigelow Martin, A.B., *Editor of Academic Publications*



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COLUMBIAN COLLEGE OF ARTS AND SCIENCES: Associate in Arts (A.A.), Bachelor of Arts (A.B.), Bachelor of Science (B.S.), and Bachelor of Science in Medical Technology (B.S. in Med. Tech.)

GRADUATE SCHOOL OF ARTS AND SCIENCES: Master of Arts (A.M.), Master of Fine Arts (M.F.A.), Master of Music (Mus.M.), Master of Science (M.S.), and Doctor of Philosophy (Ph.D.)

SCHOOL OF MEDICINE: Doctor of Medicine (M.D.)

NATIONAL LAW CENTER: Bachelor of Laws (LL.B.), Master of Laws (LL.M.), Master of Comparative Law (M.Comp.L.), Master of Comparative Law (American Practice) (M.Comp.L.(Am. Prac.)), and Doctor of Juridical Science (S.J.D.)

SCHOOL OF ENGINEERING AND APPLIED SCIENCE: Bachelor of Science (Civil Engineering) (B.S. (C.E.)), Bachelor of Science (Electrical Engineering) (B.S. (E.E.)), Bachelor of Science (Measurement Science) (B.S. (Meas.S.)), Bachelor of Science (Mechanical Engineering) (B.S. (M.E.)), Master of Science (M.S.), Master of Engineering Administration (M.E.A.), and Doctor of Science (D.Sc.)

SCHOOL OF EDUCATION: Bachelor of Arts in Education (A.B. in Ed.), Bachelor of Science in Physical Education (B.S. in P.E.), Master of Arts in Teaching (A.M. in T.), Master of Arts in Education (A.M. in Ed.), Education Specialist (Ed.S.), and Doctor of Education (Ed.D.)

SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION: Bachelor of Business Administration (B.B.A.), Bachelor of Science in General Studies (B.S. in Gen.Std.), Master of Arts in Government (A.M. in Govt.), Master of Business Administration (M.B.A.), Master of Public Administration (M.P.A.), Master of Science in Business Administration (M.S. in B.A.), Master of Science in Financial Management (M.S. in Fin.Mgt.), Master of Science in Governmental Administration (M.S. in Govt.Adm.), Master of Science in Personnel Administration (M.S. in Per.Adm.), Master of Science in Public Administration (M.S. in P.A.), Graduate Certificate in Health Care Administration (Grad.Cert. in H.C.A.), Doctor of Business Administration (D.B.A.), and Doctor of Public Administration (D.P.A.)

SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS: Bachelor of Arts (A.B.), Certificate of the Institute for Sino-Soviet Studies (Cert. of I.S.S.S.), Master of Arts (A.M.), and Master of Science in International Affairs (M.S. in I.A.)

COLLEGE OF GENERAL STUDIES: Bachelor of Science in General Studies (B.S. in Gen.Std.) and Bachelor of Science in Geodetic and Cartographic Science (B.S. in Geod. and Cart.Sc.)



# THE GEORGE WASHINGTON UNIVERSITY

COLUMBIAN COLLEGE OF ARTS AND SCIENCES, 1821

THE GRADUATE SCHOOL OF ARTS AND SCIENCES, 1893

THE SCHOOL OF MEDICINE, 1825

THE NATIONAL LAW CENTER, 1865

THE SCHOOL OF ENGINEERING AND APPLIED SCIENCE, 1884

THE SCHOOL OF EDUCATION, 1907

THE SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION, 1928

THE SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS, 1928

THE COLLEGE OF GENERAL STUDIES, 1950

THE DIVISION OF UNIVERSITY STUDENTS, 1930

THE SUMMER SESSIONS, 1916

THE UNIVERSITY HOSPITAL, 1898



THE GEORGE WASHINGTON UNIVERSITY BULLETIN



SCHOOL  
OF  
ENGINEERING  
AND  
APPLIED SCIENCE

1967-1968



## CORRESPONDENCE DIRECTORY

Detailed information may be obtained by addressing inquiries as indicated below. For any information not included here, please write to the Office of Admissions. Mailing address for all University offices unless otherwise indicated is The George Washington University, Washington, D. C. 20006.

Information concerning courses of instruction, programs, and faculties of the several colleges and schools will be found in separate issues of the University Bulletin, which are listed on page 85. Zip code is essential for mailing catalogues.

Admission.....Office of Admissions  
 Law (LL.B. degree).....Dean of The National Law Center  
 School of Medicine.....1331 H Street, Washington, D. C. 20005  
 Alumni Association.....Alumni Office  
 Medical Alumni Association.....1331 H Street, Washington, D. C. 20005  
 Financial Aid.....Student Financial Aid Office  
 Foreign Students.....Adviser to International Students  
 Gifts and Bequests.....Resources Programs

### Graduate Study

In Arts and Sciences.....Dean of The Graduate School of Arts and Sciences  
 In Education.....Dean of The School of Education  
 In Engineering and Applied Science.....Dean of The School of Engineering  
 and Applied Science  
 In Law.....Associate Dean of The National Law Center, for Graduate Studies  
 In Accounting, Business Administration, Business and Economic Statistics,  
 Health Care Administration, International Business, Personnel  
 Administration, Public Administration, Urban and Regional Planning  
 Dean of The School of Government and Business Administration  
 In International Affairs and Public Affairs.....Dean of  
 The School of Public and International Affairs

### Housing

Men.....Dean of Men  
 Women.....Dean of Women  
 Off-Campus and Noncredit Courses.....Dean of The College of General Studies  
 Student Employment.....Student Placement Office  
 Summer Sessions.....Dean of The Summer Sessions  
 Transcripts of Records.....Registrar  
 Veterans Education.....Director of Veterans Education

THE GEORGE WASHINGTON UNIVERSITY BULLETIN  
 Volume LXVI, Number 6, February 1967

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# THE GEORGE WASHINGTON UNIVERSITY BULLETIN

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### THE SCHOOL OF ENGINEERING AND APPLIED SCIENCE 1967-68



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Financial Aid.....	Student Financial Aid Office
Foreign Students.....	Advisor to International Students
Gifts and Bequests.....	Resource Projects

## THE SCHOOL OF ENGINEERING

In Arts and Sciences.....	Dean of The Graduate School of Arts and Sciences
In Applied Science.....	Dean of The School of Engineering and Applied Science
In Engineering and Applied Science.....	Dean of The School of Engineering and Applied Science
In Law.....	Associate Dean of The National Law Center, The Graduate School of Law
In Accounting, Business Administration, Business and Economic Statistics, Health Care Administration, International Science, Personnel Administration, Public Administration, Urban and Regional Planning.....	Dean of The School of Government and Business Administration
In International Affairs and Public Affairs.....	Dean of The School of Public and International Affairs

## Housing

Men.....	Dean of Men's Housing
Women.....	Dean of Women's Housing
Off-Campus and Noncredit Courses.....	Dean of The College of General Studies
Student Employment.....	Student Placement Office
Student Services.....	Dean of The Student Services Center
Transfer of Records.....	Dean of The Student Services Center
Volunteer Services.....	Director of Volunteer Services

THE GEORGE WASHINGTON UNIVERSITY BULLETIN  
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JANUARY, FEBRUARY, MARCH, APRIL  
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## THE CALENDAR 1967-68

### 1967 FALL SEMESTER

<i>September 8</i>	Placement tests for entering students <i>Friday</i>
<i>September 11</i>	Orientation Assembly for all new students <i>Monday</i>
<i>September 11-12</i>	Advising for all students <i>Monday-Tuesday</i>
<i>September 12-13</i>	Registration—Tompkins Hall of Engineering, 725 Twenty-third Street, N.W. <i>Tuesday-Wednesday</i>
	Application for February graduation due as part of registration
<i>September 14</i>	Classes begin <i>Thursday</i>
<i>September 29</i>	Titles of Master's theses of February candidates due <i>Friday</i>
<i>November 10</i>	Veterans Day (holiday) <i>Friday</i>
<i>November 22</i>	Thanksgiving Recess begins after last class <i>Wednesday</i>
<i>November 27</i>	Classes resume <i>Monday</i>
<i>December 1</i>	D.Sc. dissertations of February candidates due <i>Friday</i>
<i>December 16</i>	Christmas Recess begins after last class <i>Saturday</i>
<i>January 3</i>	Classes resume <i>Wednesday</i>
<i>January 3</i>	Master's theses of February candidates due <i>Wednesday</i>
<i>January 10</i>	Last day of fall-semester classes <i>Wednesday</i>
<i>January 13-20</i>	Examination period <i>Saturday-Saturday</i>

### 1968 SPRING SEMESTER

<i>January 22</i>	Placement tests and waiver examinations <i>Monday</i>
<i>January 22-24</i>	Advising for all students <i>Monday-Wednesday</i>
<i>*January 25-27</i>	Registration—Tompkins Hall of Engineering, 725 Twenty-third Street, N.W. <i>Thursday-Saturday</i>
	Application for June graduation due as part of registration
<i>January 29</i>	Spring-semester classes begin <i>Monday</i>
<i>February 2</i>	Titles of Master's theses of June candidates due <i>Friday</i>
<i>February 22</i>	Winter Convocation (holiday) <i>Thursday</i>
<i>April 1</i>	D.Sc. dissertations of June candidates due <i>Monday</i>
<i>April 6</i>	Spring Recess begins after last class <i>Saturday</i>
<i>April 16</i>	Classes resume <i>Tuesday</i>
<i>April 26</i>	Master's theses of June candidates due <i>Friday</i>
<i>May 15</i>	Last day of spring-semester classes <i>Wednesday</i>
<i>May 18-25</i>	Examination period <i>Saturday-Saturday</i>
<i>May 30</i>	Memorial Day (holiday) <i>Thursday</i>
<i>June 2</i>	Baccalaureate Service <i>Sunday</i>
<i>June 2</i>	Commencement <i>Sunday</i>

### 1968 SUMMER SESSIONS†

#### 1968 FALL SEMESTER

<i>September 17-18</i>	Registration— <i>Tuesday-Wednesday</i>
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\* Registration is conducted alphabetically according to the first letter of the student's surname. The alphabetical breakdown and the hours of registration will be stated in the *Schedule of Classes* which is available well in advance of each semester.

† Dates will be announced in the Calendar of the 1968 Summer Sessions Catalogue published December 1967.



## THE SCHOOL OF ENGINEERING AND APPLIED SCIENCE

### A PROFILE

THE SCHOOL OF ENGINEERING AND APPLIED SCIENCE is a professional School in a University comprised of nine degree-granting schools and colleges.

The University is a private nonsectarian institution of higher education in the center of the Nation's Capital.

The School centers attention on the individual and his development toward a successful professional career.

Curricula emphasize theory, analysis, and design, in preparation for productive careers in modern science and engineering.

Imagination and creativity are fostered in an atmosphere that encourages the student to realize his full capabilities in accord with his interests.



## THE SCHOOL

EVERY SCHOOL HAS FEATURES THAT DISTINGUISH IT FROM OTHER SCHOOLS and give it a distinctive character. These may be ivy-covered halls, a particular strength of faculty in some area, a location, a student body with certain characteristics. It is necessary that a student know the character of the school before he can make an intelligent decision to undertake his educational development there.

The School of Engineering and Applied Science is a professional school in a University comprised of nine degree-granting schools and colleges. The University is the only private nonsectarian institution of higher education in the Nation's Capital. It is an urban institution in the center of the city. Its students live in the midst of the city's life with all its opportunities for cultural and intellectual development. In a very real sense college life is integrated into the pattern and culture of modern society, providing a most favorable environment for the development and maturing of the student to take his place in the world of today.

The School's purpose is the education of men and women for productive careers in engineering and applied science. We believe we have the function and responsibility to provide an environment and discipline that encourages and fosters development of the whole individual, with an understanding of the society he will serve as well as a high competence in science and technology. The engineer and the applied scientist work for the benefit of humanity; to do so well and responsibly requires that they comprehend the behavior of human beings in addition to the behavior of machines or materials.

The School recognizes the individual student as the single most important element in the educational process. Since individuals are distinctive, there can be no single educational formula or pattern by which the student may be led to professional competence. Therefore attention is centered on the individual, seeking that particular combination that will encourage and assist him to his utmost effort in his development. The School provides opportunity for many educational experiences, and encourages him to explore many paths toward his goal. He is given much personal freedom, but freedom tempered with responsibility to accept the consequences of his actions and decisions and restrained by the ethics, practices, and rules of the profession he is preparing to enter.

We recognize the essential unity of science and technology, of engineering and applied science. In our curricula strong emphasis is placed on knowledge



which is fundamental and has continuing application. Major attention is given to acquisition of competence in theory, analysis, and design, to the end that the individual may possess the means for translating his ideas into reality. Imagination and creativity are encouraged in preference to memorization of technical detail. We aim toward understanding and comprehension as preparation for a professional career.

The demands of a professional career in engineering or applied science are exacting. We believe the student should be exposed to these demands in his preparation, as a part of his learning process. He is encouraged to explore the limits of his capability, and is assisted when he makes mistakes. He learns by doing and by the correction of his errors and mistakes. He is never penalized for trying but he must try.

The atmosphere of the School is one of serious-minded effort toward mature development. Students work closely with faculty members. The student body is close-knit and has a high sense of responsibility and loyalty to its individual members and to the School.

Approximately half of the 350 undergraduate and 950 graduate students come from throughout the nation and foreign countries. A substantial number of students are employed. The student body has a primary interest in design, research, development, and management in both scientific and engineering activities.

The objective toward which the School strives is to stimulate and assist the student to develop to the limit of his capability; to acquire understanding of the principles and practices of engineering and applied science; to develop skill in the application of his knowledge to serve the needs of mankind; and to have a sense of responsibility to society and his profession.

## HISTORY

The School of Engineering and Applied Science was organized October 1, 1884, as the Corcoran Scientific School of Columbian University and was situated in the University Building then at 15th and H Streets, N.W. The School was named in honor of William W. Corcoran, Trustee and President of the Corporation from 1869 to 1888. Day and evening courses were offered in Literature, Science, and Technology and led to the degrees of Bachelor of Science, Civil Engineer, Mechanical Engineer, and Mining Engineer. The School was among the first to accept women for degree candidacy in engineering.

In 1903 the Corcoran Scientific School, the School of Graduate Studies, and the Columbian College were merged into a single Department of Arts and Sciences. Engineering degrees were made graduate.

Administrative changes led to The Washington College of Engineering being initiated in 1905 as one of the several semi-independent undergraduate colleges of the University, each with its own Board of Trustees. The College provided instruction leading to undergraduate degrees in engineering and architecture.

In 1909 the name of the College was changed to the College of Engineering and Mechanic Arts, and the curricula were revised to give the student a thorough understanding of the theory underlying engineering practice. Emphasis was placed on the development of a knowledge of scientific principles upon which the student could build and by which he might solve new problems as they are met in practice.



The name of the School was changed again in 1914 to the College of Engineering and later to the School of Engineering. Architecture was dropped from the curriculum and degrees were limited to the field of engineering. However, the primary emphasis upon principles rather than technology which had characterized the School since 1903 was continued and has remained to this day as one of the important distinguishing features of the School.

In 1962 the name of the School became the School of Engineering and Applied Science.

### ACADEMIC STATUS

The George Washington University is accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools.

The University is on the approved list of the American Association of University Women and is a member of the College Entrance Examination Board.

The curricula in Civil Engineering, Electrical Engineering, and Mechanical Engineering are accredited by the Engineers' Council for Professional Development.



## UNDERGRADUATE STUDY

THE UNDERGRADUATE PROGRAM is intended to provide a solid foundation in the basic principles, concepts, and techniques underlying engineering and applied science, on which the individual may build technical competence in a variety of areas as his professional career develops. It is preparation for a career in engineering or applied science, as it exists today and as it may develop in the future.

Undergraduate study is the formal beginning of a life-long continuing program of education. The School provides an environment that encourages and fosters the attitudes and disciplines essential to professional growth. The graduate, when he receives his Bachelor's degree, is prepared for productive work in his chosen field; he is also prepared for further development and progress, both formal and informal.

Admission indicates the student possesses at least minimum preparation and the probable capacity to meet the unusual educational demands of this School. However, the nature of the approach requires the student's real effort, intellectual discipline, and maturity. Because the School can predict neither the student's response to the demands made on him nor the program he should follow for his most effective development, it has designed an undergraduate program that offers a variety of experiences through which the student may find his own best path to maturity and growth in educational development.

In the fields of engineering and applied science there is no substitute for demonstrated ability and competence to solve the problems faced. Achievement in a particular course of study, while important, is less pertinent than the ability to analyze and interpret all the aspects of a problem, formulate solutions, and evaluate the solutions in the light of all available information. The undergraduate program provides periodic evaluation and appraisal by a faculty adviser of the student's ability and progress.

Engineers and applied scientists are involved with the conquest of nature for the benefit of mankind, as well as with the development and accumulation of the knowledge. They live and do their work in the real-life environment of the moment, and what they do for humanity is dictated in large part by the needs and desires of man for security and comfort. Thus they must have a strong sense of morality, a high concern for the progressive well-being of mankind, and an intimate knowledge of the realities of life. Therefore the School insists that the undergraduate include in his study courses in the humanities and social sciences, to the extent necessary to develop a reasonable understanding and appreciation of these areas of knowledge. Cultivation in the intricacies of society and comprehension of human values are sought for the student, in complement to his scientific and technical literacy.



The School is a place for learning; for experiencing adventures of the mind and of the hands; for the formulation, exchange, and exploration of ideas. During his undergraduate years the student is led to strengthen his skills in analysis and his talent for creative activity, through liberal use of project-type laboratory work. Independent thought and original ideas receive higher evaluation, in the appraisal of student achievements, than the rote recital of information.

### THE CURRICULA

The four four-year curricula lead to the degree of Bachelor of Science, with parenthetical designation of the area of concentration; for example, Bachelor of Science (Electrical Engineering). Students who are deficient in preparation require a longer period; those who are admitted with advanced standing or who attend summer sessions can complete the requirements in less time.

The program of the first five semesters (2½ years) is common to all curricula and provides the essential broad base of scientific principles, mathematical techniques, and culture underlying the professional courses of the last three semesters.

A minimum total of 130 semester hours is required to qualify for the degree. However, students are encouraged to elect additional course work above the required minimum to the extent their interests and the School's offerings permit.

Degrees are offered in Civil Engineering, Electrical Engineering, Measurement Science, and Mechanical Engineering.

The student is assisted by his faculty adviser, who approves his program each semester prior to registration. For the guidance of the student and his adviser, every beginning student takes the School's placement examinations in English, Reading, Algebra, and Trigonometry. The student must take remedial work in any of these areas in which he is deficient, prior to enrollment in courses in the area of deficiency.

### BASIC CURRICULUM

(Semester hours of credit are indicated in parentheses following the name of the course)

#### *First Semester*

- Chem 11: General Chemistry (4)
- Engr 21: Application of Computers to Engineering Problems (3)
- Math 21: Calculus I (3)
- \*Elective: Selected from humanities or social sciences (3 to 6)

#### *Second Semester*

- Chem 12: General Chemistry (4)
- Math 22: Calculus II (3)
- Phys 30: General Physics (4)
- Elective: Selected from humanities or social sciences (3 to 6)

\* Students deficient in Physics take Physics 1 (4); students deficient in English take English 1x (3).



*Third Semester*

- Math 28: Calculus III and IV (6)  
Phys 31: Introduction to Theoretical Physics (2)  
Phys 51: Introduction to Experimental Physics (2)  
Elective: Selected from humanities or social sciences (3 to 6)

*Fourth Semester*

- Ap S 59: Introductory Analytical Mechanics I (4)  
Ap S 113: Engineering Analysis I (3)  
Phys 32: Introduction to Theoretical Physics (2)  
Phys 52: Introduction to Experimental Physics (2)  
Elective: Selected from humanities or social sciences (6)

*Fifth Semester*

- Ap S 9: Fields and Waves I (3)  
Ap S 29: Linear Networks I (3)  
Ap S 60: Introductory Analytical Mechanics II (4)  
Ap S 85: Thermodynamics (3)  
Ap S 114: Engineering Analysis II (3)

**CIVIL ENGINEERING**

Civil engineering is the broad branch of engineering most closely related to daily human activities. Study in this area prepares for careers in the design of buildings, bridges, aircraft and missile frames, tunnels, and dams; the planning of cities; and research on new types of structures, new materials, and new methods of construction.

The concentration of study outlined below provides the essentials for beginning a career upon graduation, for registration as a professional civil engineer as required by law, and for continuing study at the graduate level.

Prerequisite: first five semesters in Basic Curriculum.

*Sixth Semester*

- Ap S 63: Fluid Mechanics (3)  
Ap S 65: Dynamics of Linear Systems (3)  
Ap S 101: Materials Science (3)  
Ap S 121: Structural Theory I (3)  
Engr 18: Engineering Electronics I (3)  
Elective: Selected from humanities or social sciences (3)

*Seventh Semester*

- Ap S 70: Earth Science (3)  
Ap S 71: Mechanics of Deformable Solids I (3)  
Ap S 122: Structural Theory II (3)  
Engr 11: Structural Design I (3)  
Engr 113: Engineering Materials (3)  
Engr 141: Urban Planning (3)



*Eighth Semester*

- Ap S 62: Soil Mechanics (3)  
 Engr 10: Hydraulic Engineering (3)  
 Engr 12: Structural Design II (3)  
 Engr 140: Engineering Economics (3)  
 Engr 142: Design Projects (3)  
 Engr 144: Environmental Engineering (3)

**ELECTRICAL ENGINEERING**

The electrical engineering curriculum provides preparation for the use and control of electrical energy. The study outlined prepares for such activities as design and use of electronic devices; application of such devices in control systems, communication systems, and computers; analysis and design of electrical devices; and electrical energy conversion.

This concentration provides an insight into the most modern areas of electrical engineering, preparation for immediate careers in these areas, and a sound base for graduate study.

Prerequisite: first five semesters in Basic Curriculum.

*Sixth Semester*

- Ap S 10: Fields and Waves II (3)  
 Ap S 30: Linear Networks II (3)  
 Ap S 101: Materials Science (3)  
 Engr 18: Engineering Electronics I (3)  
 Engr 100: Introductory Electrical Engineering Laboratory (3)  
 Elective: Selected from humanities or social sciences (3)

*Seventh Semester*

- Ap S 31: Linear Systems (3)  
 Ap S 120: Electromagnetic Waves (3)  
 Ap S 130: Electrical Energy Conversion (3)  
 Engr 19: Engineering Electronics II (3)  
 Engr 105: Electrical Engineering Laboratory I (3)  
 Engr 121: Switching Networks (3)

*Eighth Semester*

- Ap S 32: Active Networks (3)  
 Ap S 50: Information Transmission, Modulation, and Noise (3)  
 Ap S 55: Control Systems (3)  
 Engr 20: Engineering Electronics III (3)  
 Engr 49: Electrical Measurement (3)  
 or Engr 122: Digital Computers (3)  
 Engr 106: Electrical Engineering Laboratory II (3)

**MEASUREMENT SCIENCE**

Measurement science concerns the design, construction, and use of instruments in measurement, and the design of experiments. The curriculum prepares for



such activities as testing of rockets, missiles, and space vehicles; measurements of the characteristics and properties of materials; determination of standards of measurement in light, heat, optics, electricity, etc.; measurement in various fields of science and in medicine; design and construction of measuring instruments; design and execution of experiments and tests of various kinds; and control of quality of manufactured products.

The graduate will find many opportunities in space research, industry, manufacturing, and research. Opportunities are especially good in the design and application of instruments.

Prerequisite: first five semesters in Basic Curriculum.

#### *Sixth Semester*

- Ap S 30: Linear Networks II (3)
- Ap S 63: Fluid Mechanics (3)
- Ap S 101: Materials Science (3)
- Ap S 115: Engineering Analysis III (3)
- Engr 18: Engineering Electronics I (3)
- Engr 100: Introductory Electrical Engineering Laboratory (3)

#### *Seventh Semester*

- Ap S 105: Measurement Science I (3)
- Engr 19: Engineering Electronics II (3)
- Engr 52: Introductory Instrumentation (3)
- Engr 54: Mechanical Measurement (3)
- Engr 55: Heat Measurement (3)
- Engr 101: Measurement Laboratory (3)

#### *Eighth Semester*

- Ap S 106: Measurement Science II (3)
- Engr 20: Engineering Electronics III (3)
- Engr 49: Electrical Measurement (3)
- Engr 53: Instrumentation (3)
- Engr 56: Pressure Measurement (3)
- Engr 102: Measurement Projects Laboratory (3)

### **MECHANICAL ENGINEERING**

Mechanical engineering is the broad branch of engineering concerning machinery, equipment, and other power devices; particularly in manufacturing and industry. The study outlined below is preparation for such activities as design of power generating equipment and plants (viz: jet engines, gas turbines, steam boilers, etc.); design and construction of aircraft, missiles, automobiles, and ships; manufacture of machines and goods; design of mechanical equipment (heating, air-conditioning, automatic machinery, nuclear reactor controls); and research to develop new kinds of power machinery.

The graduate will find many opportunities in manufacturing, design, and research. The preparation is adequate for beginning the practice of mechanical engineering, and provides the essential knowledge for registration as required by law for practice as a professional mechanical engineer.



Careers in research in mechanical engineering should include additional study at the graduate level.

Prerequisite: first five semesters in Basic Curriculum.

### *Sixth Semester*

- Ap S 63: Fluid Mechanics (3)
- Ap S 65: Dynamics of Linear Systems (3)
- Ap S 101: Materials Science (3)
- Engr 18: Engineering Electronics I (3)
- Engr 31: Thermal Power (3)
- Elective: Selected from humanities or social sciences (3)

### *Seventh Semester*

- Ap S 64: Compressible Fluid Flow (3)
- Ap S 66: Advanced Dynamics (3)
- Ap S 71: Mechanics of Deformable Solids I (3)
- Ap S 87: Heat Transfer Theory (3)
- Engr 113: Engineering Materials (3)
- Engr 131: Mechanical Design I (3)

### *Eighth Semester*

- Ap S 55: Control Systems (3)
- Ap S 72: Mechanics of Deformable Solids II (3)
- Engr 86: Energy Conversion (3)
- Engr 111: Mechanical Engineering Laboratory (3)
- Engr 132: Mechanical Design II (3)
- Engr 140: Engineering Economics (3)

## ADMISSION TO UNDERGRADUATE STUDY

The School admits those who can benefit themselves and society by disciplined intellectual effort in its environment.

Admission to the School is the first selective step of a long series of qualifying tests the student will take in progression toward professional competence and status, and indicates the School's belief that the applicant has at least the minimum preparation and ability to complete the curriculum successfully.

### CRITERIA FOR ADMISSION

The applicant must be of good character and must have an academic background appropriate for the program of studies contemplated.

Consideration for admission is based on the following:

1. An acceptable certificate of graduation from an accredited high school showing at least fifteen units\*;
2. The principal's statement that the applicant is prepared to undertake college work;

\* A unit represents a year's study in a secondary school subject, including in the aggregate not less than 120 sixty-minute periods of prepared classroom work.



3. Scores on the following College Entrance Examination Board tests: the Scholastic Aptitude Test, the English Composition Achievement Test, and a Level I (Standard) or Level II (Intensive) Mathematics Test—Level I preferred;

4. Evidence from the high school grades that the applicant can achieve satisfactorily in formal study;

5. Evidence in reference letters, requested by the applicant, as to the applicant's motivation toward engineering and applied science, and his seriousness of purpose.

The qualifications of applicants who, because of unusual circumstances, do not meet the above requirements will be considered by the School, which may prescribe admission tests.

Nine and one-half of the fifteen units required for entrance must be distributed as follows: three in English, two in algebra, one in plane geometry, one-half in plane trigonometry, one in physics or chemistry, and two in one foreign language or history. General science may not be counted in satisfaction of the science requirement but may be counted as an elective unit.

It is recommended that *both* physics and chemistry be studied in high school. A high school course in solid geometry is recommended as a firm foundation for college mathematics.

**Quantitative Deficiency.**—A graduate of an approved high school who lacks not more than two units of the required subjects and who presents fifteen acceptable units may be admitted to a prescribed program which includes courses to make up his deficiencies.

### ADMISSION PROCEDURE

An applicant for admission obtains from the Office of Admissions of the University an application blank which he must fill out completely and return with the \$25\* application fee.

### STUDENTS FROM U. S. INSTITUTIONS

Records presented become the property of the University and *cannot* be returned.

### REGULAR ADMISSION

Applicants for regular admission who wish to begin college in the fall semester *should* apply during the fall term of the senior high school year, *and* no later than March 1. Students graduating at mid-term wishing to begin college in the spring semester *must* apply no later than December 1. Applications and all required credentials of students wishing to begin college in either the first or second term of the summer session must be received prior to March 1.

*An applicant from a secondary school* must send the high school record form provided by the University to his high school principal, with the request that the completed form be mailed directly to the Office of Admissions.

\* Application fee must be by check or postal money order, payable to The George Washington University. The application fee is waived for a student applying for readmission who has previously been admitted to degree candidacy.



### EARLY DECISION PLAN

For the qualified applicant who wants to begin college in the fall semester and receive an early guarantee of space, the University offers an early decision plan. The applicant need *only* indicate on the application form that he wishes an early decision and have all required credentials in the Office of Admissions prior to November 1. A decision will be mailed by December 15. The declaration of intent to attend the University and a \$200 tuition deposit (plus an additional \$200 housing deposit for resident students), nonrefundable, *must be submitted by January 15 to reserve space.*

If the applicant is accepted under the early decision plan but fails to submit the deposit by January 15, he will be considered as for regular admission, as described above.

### TRANSFER STUDENTS

Transfer students from other institutions *must* submit application and required credentials prior to August 15 for the fall semester, December 15 for the spring semester, May 1 for the Summer Sessions.

The transfer student must be in good standing as to scholarship and conduct. He must be eligible to return to the last previously attended institution in the semester for which he seeks admission to this University.

An applicant who has attended one or more institutions of higher learning must request *each* registrar to mail directly to the Office of Admissions a transcript of his record, *even though credits were not earned.*

If high school units are not shown on the college transcript, the applicant should request his high school to submit a transcript to the Office of Admissions.

If an applicant has fewer than 60 semester hours of acceptable work (C or better on academic work from an accredited institution), he must request that his high school record and College Entrance Examination Board Test scores be sent to the Office of Admissions.

### STUDENTS FROM FOREIGN INSTITUTIONS

Application, required records, and scores on the *Test of English as a Foreign Language* (see page 18) must be received from all *foreign applicants* no later than March 1 for the fall semester and November 1 for the spring semester.

### REQUIRED RECORDS

Applicants must request all educational institutions attended to send directly to the Office of Admissions official credentials listing subjects studied, grades received, examinations taken, and degrees received. Certified copies of diplomas and certificates from secondary schools and all colleges and universities attended are required. Records of state examinations and certificates are also needed. All records become the property of the University and *cannot* be returned.



## LANGUAGE TEST

Students from countries whose official language is not English are required to take the *Test of English as a Foreign Language*. Students are responsible for making arrangements for taking the test and should address inquiries to: TOEFL, Educational Testing Service, Princeton, New Jersey 08540, U.S.A. The completed application form should be returned to the Testing Service at Princeton well in advance of the beginning of the semester for which the applicant seeks admission. A \$10 test fee, which should be remitted with the application, entitles the student to have his test score sent to three different institutions. Registration for the *Test of English as a Foreign Language* does not constitute application for admission to The George Washington University.

The Bulletin of Information, obtainable without charge, contains description of the test as well as rules regarding application, fees, reports, and the conduct of the test; lists of examination centers; examination dates; and application blank. On the application for the test, the student should specify that the scores be sent to the Office of Admissions, The George Washington University, Washington, D. C. 20006.

If additional tests are prescribed, necessary instructions will be sent to the applicant by the Office of Admissions.

## READMISSION

A student previously registered in the University who was not registered on campus during the immediately preceding semester must apply for readmission. Final dates for applying are the same as those for "Transfer Students," see page 17. If the student applies as a degree candidate and was previously registered as a nondegree student, or if he has attended one or more higher institutions during his absence from the University, he must have complete, official transcripts sent to the Office of Admissions from each institution attended before his application will be considered. Applications for readmission are considered on the basis of regulations currently effective.

The application fee is waived for a student applying for readmission who has previously been admitted to degree candidacy.

## TUITION DEPOSIT

Upon notification of acceptance, a \$100 tuition deposit (\$200 for students admitted by early decision, see page 17) will be required of all full-time students including those readmitted. The deposit is credited toward tuition and is not refundable.

## ADVANCED STANDING

## CREDIT FOR ADVANCED PLACEMENT EXAMINATIONS

Advanced standing may be granted for study at the collegiate level in advanced courses in an approved secondary school, if substantiated by satisfactory performance in the Advanced College Placement Examination. Arrangement for the examination is the responsibility of the applicant and should be made with



the College Board Advanced Placement Examinations, Educational Testing Service, 20 Nassau Street, Princeton, N. J. 08540 or 1947 Center Street, Berkeley, Calif. 94707.

The applicant must request the examining service to submit the test papers and scores to the Office of Admissions. Consideration is given to both the quality of performance on the examination and the quality and content of the course of study completed by the applicant. Credit may be withheld pending satisfactory completion of higher-level courses in the same field.

Total credit that may be so granted is ordinarily limited to 15 semester hours, not more than 8 semester hours of which may be in any one examination area. In exceptional cases these limits may be exceeded, but in no case will the credit granted exceed 30 semester hours.

#### CREDIT FROM HIGHER INSTITUTIONS

Advanced standing may be granted for work successfully completed at accredited institutions of higher learning. Credit will be granted for transferred work only when it meets the requirements for the degree sought at this University, and subject to the general University regulations concerning satisfactory subsequent work. Work of low pass grade (*D* or the equivalent) will not be considered for transfer.

#### SERVICE SCHOOL CREDIT

A limited amount of credit earned in service schools since 1941 may be considered for assignment to qualified degree candidates in the School of Engineering and Applied Science. Veterans should submit to the Office of Admissions photostatic copies of their service school records, indicating courses successfully completed with sufficient identification of the course to locate it in the *Guide to Evaluation of Educational Experience in the Armed Forces*.

#### REGISTRATION

A student cannot register for classes until he has received a letter of admission to the University.

No registration is accepted for less than a semester or one summer session.

A student may not register concurrently in the School of Engineering and Applied Science and in another institution or another division of this University without the prior permission of the Dean. Allowance of credit for work done concurrently at another institution will be at the discretion of the Dean.

The dates, hours, and place of registration will be stated in the *Schedule of Classes*, which is available well in advance of each semester.

Eligibility for registration is established as follows:

*New or Transfer Student.*—Upon receipt of a letter of admission from the Office of Admissions, the new or transfer student is eligible for registration.

*Readmitted Student.*—A student previously registered in the University who was not registered for campus courses during the preceding semester or summer session must apply for and receive a letter of readmission from the Office of Admissions, before he is eligible for registration. A student registered for



the spring semester 1966-67 need not apply for readmission for the fall semester of 1967-68. Such a student is a "Continuing Student."

*Continuing Student.*—The student registered for campus courses in the immediately preceding semester of the academic year is eligible to register upon presentation of his student identification card from the previous semester. The student registered for the Summer Sessions campus courses, and not restricted to summer registration, is eligible to register for the fall semester on presentation of his Summer Sessions student identification card.

## REGULATIONS

If a student knowingly makes a false statement or conceals material information on an application for admission, registration card, or any other University document, his registration may be canceled and he will be ineligible (except by special action of the Faculty) for subsequent registration in any unit of the University.

## ATTENDANCE

A student may not attend classes until registration is completed and fees due are paid. Regular attendance is required. A student may be dropped from any course for undue absence.

A student suspended for any cause may not attend classes during the period of suspension.

The student is expected to attend every meeting of the course in which he is registered, fully prepared to carry on the work required. The student is held responsible for all work in the course, and all absences must be excused before provision will be made for him to make up the work missed. Excuses for absences from examinations which have been announced in advance can be obtained only by making written application to the instructor in charge of the course.

## AMOUNT OF WORK

A full-time undergraduate student who is not on probation may register for no more than 20 semester hours. A student employed more than 24 hours a week who is not on probation may take no more than 10 semester hours. In exceptional cases these limits may be exceeded with the Dean's permission.

A student previously unemployed who accepts employment after registration must immediately report that fact to the Dean so that his schedule may be adjusted if necessary.

## ADVISORY SYSTEM

The School of Engineering and Applied Science encourages a close faculty-student relationship. Every entering undergraduate student is assigned a permanent faculty adviser to assist him to orient himself in the professional discipline. Faculty advisers counsel students on their programs of study, the achievement and maintenance of satisfactory scholastic performances, professional develop-



ment, and extracurricular activity as part of the educational process. The adviser represents the student in all cases requiring faculty action.

Students must obtain their advisers' approval of programs of study prior to registration. Until a student has completed the work required for the degree he must consult his adviser in all academic matters. However, an adviser may not deny a student entry into any course or activity to which he is entitled under the regulations of the School.

All students are encouraged to discuss college problems with their advisers or instructors at any time; and parents or guardians are invited to consult with the Dean and advisers concerning any student problems.

Faculty advisers discharge their counseling duties in accordance with the high principles of their professional responsibility; however, the final responsibility for a student's action lies wholly with the student.

### SCHOLARSHIP REQUIREMENTS

An undergraduate student must maintain a cumulative quality-point index of at least 2.00.

### GRADES

Grades are mailed to the student through the Office of the Registrar at the close of each semester.

The following grading system is used: *A*, excellent; *B*, good; *C*, average; *D*, passing; *F*, failing; *CR* indicates credit. Whenever a grade has not been assigned, the symbol *I* (incomplete) or the symbol *W* (authorized withdrawal) will be recorded.

An *I* (incomplete) grade is given by an instructor only for reasons satisfactory to the instructor and presented to him before the last day of classes for the semester in which the course is given. An *I* cannot be removed by repeating the course. An *I* cannot be made up after the lapse of one calendar year except by written permission of the Dean's Council. An *I* which is not removed within one calendar year is automatically changed to an *F*.

A student may not repeat for grade a course in which he has received a grade of *D* or above, unless required to do so by the department concerned. A written statement to this effect must be submitted to the Registrar by the Dean.

### THE QUALITY-POINT INDEX

Scholastic standing is computed in terms of the quality-point index, obtained by dividing the number of quality points by the number of semester hours for which the student has registered, both based on the complete record in this University applicable to the degree objective of the student.

Quality points are computed from grades as follows: *A*, four points; *B*, three points; *C*, two points; *D*, one point; *F*, no points, for each semester hour for which the student has registered. Courses marked *W* or *I* are not considered in determining the index, except that courses marked *I* will be considered when a formal grade is recorded. Grades in courses taken at another institution are not considered in computing the quality-point index.



In order to graduate, a student must have a quality-point index of at least 2.00 in all work taken at this University, and accepted in the School of Engineering and Applied Science.

*Mid-semester Warning.*—At the end of the seventh week of each semester, instructors report to the Dean the names of students whose scholarship is unsatisfactory. On receipt of a warning notice the student must consult his instructor and his adviser immediately.

The adviser may prescribe diagnostic tests and/or remedial study to be completed before the end of the current semester.

*Probation.*—An undergraduate student whose quality-point index falls below 2.00 is placed on probation. This probation extends over the period in which the student completes a minimum of 12 semester hours of study and may be extended over a longer period.

A student on probation is required to follow a specified program of study, including remedial studies as prescribed. He may not hold office, participate in the activities of any student organization, or represent the School in any student activity.

*Suspension.*—An undergraduate student whose quality-point index is below 2.00 at the end of his probationary period is suspended. A student whose index falls below 2.00 after removal from probation is suspended.

A student suspended for poor scholarship may apply to be readmitted in the semester or summer session which begins next after an interval of one calendar year. A student readmitted after suspension is on probation. In no case will the probationary period after readmission exceed 24 hours of study. A student suspended twice for poor scholarship will not be readmitted.

#### ACADEMIC DISHONESTY

Evidence of dishonesty on the part of any student will result in his suspension from the University upon the recommendation of the Dean's Council.

A student found guilty of dishonesty will be suspended for a stated period and will be deprived of credit for all courses in which he is enrolled during the semester in which the dishonest act occurs. A disciplinary grade of "Failure—Academic Dishonesty" will be recorded for each such course, and this grade will be employed in computation of the quality-point index.

A student who is readmitted after suspension because of academic dishonesty may be required to repeat for grade all courses for which a disciplinary grade was recorded, and both the grade earned on repetition and the disciplinary "Failure—Academic Dishonesty" grade are included in computing the quality-point index.

#### HONORS LIST

The Faculty of the School recognizes meritorious scholastic achievement by an Honors List, containing the names of candidates for undergraduate degrees whose scholastic achievement satisfies all of the following requirements:

1. The candidate's quality-point index is equal to or exceeds 3.00 on a minimum of 13 semester hours in one semester.
2. No grade below C has been received during the qualifying period.



3. No disciplinary action has been taken in respect to the student.

The Honors List is prepared at the end of the fall and spring semesters and displayed in an appropriate public place in the School. A notation is made on the student's record each time his name is included in the List.

### WITHDRAWAL

A student who withdraws or is otherwise absent from the University for one semester or more must apply for readmission. If readmitted he continues his work under the requirements and regulations in force at the time of his readmission.

Applications for withdrawal from the University or for change in class schedule must be made in person or in writing to the Dean of the School. Notification to an instructor is not an acceptable notice.

Withdrawal from a course or from the University, *without academic or financial penalty*, requires the permission of the Dean of the School. Permission to withdraw from the University will not be granted a student who does not have a clear financial record.

Withdrawal from any course without academic penalty after the fourteenth day following the first day of classes of a semester may be granted by the Dean under the following conditions: (1) exceptional circumstances make the request necessary; (2) the request is submitted on the official form for late withdrawal; (3) as of the date of request, the grades in all courses involved are *C* or better. In all cases financial regulations governing withdrawal remain in full effect.

*All charges for courses dropped without the approval of the Dean must be met by the student. Reporting the dropping of a course to an instructor does not effect its discontinuance.*

### CHANGES IN PROGRAM OF STUDIES

After the registration period a student may not make any changes in his registration without the approval of the Dean. Requests for changes in registration must be made on forms provided in the School Office, Room 100 Tompkins Hall of Engineering.

During the seven days following the first day of classes of a semester, courses may be added to the student's program with the approval of the instructor, the student's adviser, and the Dean.

Courses may be dropped without academic penalty only during the fourteen days following the first day of classes, with the approval of the instructor, the student's adviser, and the Dean.

### CREDIT

Credit toward a degree is given only after registration for and satisfactory completion of the required work of a course or upon the granting of advanced standing. A student who takes a course as an auditor may not take the same course later for credit.

On request the Registrar will issue to undergraduate degree candidates a balance sheet showing the amount of work completed and the requirements remaining to be met for the degree.



**TRANSCRIPTS OF RECORD**

Official transcripts of student records are issued on request of the student or former student who has a clear financial record. A fee of one dollar is charged for each transcript.

**SUMMER SCHOOL CREDIT**

A student who plans to attend summer school at another institution and apply credit so earned toward graduation from this University must first secure the written approval of the Dean. In no event will credit in excess of what might be earned in a similar period in this University be recognized.

**USE OF CORRECT ENGLISH**

Any student whose written or spoken English in any course is unsatisfactory may be reported by the instructor to the Dean. The Dean may assign supplementary work, without academic credit, varying in amount with the needs of the student. If the work prescribed is equivalent to a course, the regular tuition fee is charged. The granting of a degree may be delayed for failure to make up any such deficiency in English to the satisfaction of the Dean.

**CONTINUOUS REGISTRATION**

Degree candidates are expected to maintain continuous registration until all degree requirements are satisfied. By failing to register for one semester or more, the student breaks his registration and must be readmitted (see "Readmission," page 18). A "Readmitted Student" is required to satisfy the curriculum requirements existing at the time of his readmission.

Students must be registered during the summer if they elect to take courses, are taking required examinations, or are expecting to graduate at the end of the Summer Sessions.

Students on Military Leave, see page 25.

**GRADUATION REQUIREMENTS**

To be recommended by the Faculty for graduation a student must have met the admission requirement of the School; completed satisfactorily the scholarship, curriculum, residence, and other requirements for the degree for which he is registered; and be free from all indebtedness to the University. Registration, either for course work or on the "continuous registration" fee basis, is required for the semester or summer session immediately preceding the awarding of the degree.

*Application for Graduation.*—Application for graduation must be filed and the appropriate fee paid at the time of registration for the last semester or summer session of the senior year.

Students completing degree requirements during the Summer Sessions will be awarded diplomas (no formal convocation) September 30, *provided* they have



completed all degree requirements and have applied for graduation as a part of registration for the Summer Sessions.

*Curriculum.*—Curriculum requirements are stated on pages 11–15.

*Residence.*—A minimum of 30 weeks and 30 semester hours must be completed in residence. Summer work may be counted. Unless special permission is granted by the Dean to study elsewhere, the work of the final year must be completed in residence.

*Attendance and Conduct.*—The University reserves the right to refuse to confer a degree upon a candidate whose attendance or conduct has been unsatisfactory.

## HONORS

*With distinction.*—A Bachelor's degree may be conferred "with distinction," at the discretion of the Faculty, if a student attains a quality-point index of 3.50 or higher on all work taken at this institution. To be eligible for this honor a student must have completed at this institution at least one-half of the work required for the degree.

*Special honors.*—A Bachelor's degree may be conferred with "special honors," at the discretion of the Faculty, for outstanding achievement in the student's senior year work on recommendation of the Faculty, under the following regulations:

1. The student must have his candidacy for special honors approved by the department chairman representing his major field not later than the beginning of his senior year.
2. The student must meet such other conditions as may be set at the time his candidacy is approved.
3. No student will be awarded special honors unless he has a quality-point index of at least 3.00 on all work taken at this institution.
4. To be eligible for special honors a student must have completed at this institution at least one-half of the work required for the degree.

## MILITARY LEAVE

A student called to active duty will be granted military leave for the period of active duty, upon presentation to his Dean of a copy of his orders and a petition for such leave. The maintenance of "continuous registration" is not required of the student on military leave; however, he must apply for readmission to the University prior to the semester in which he expects to return.

## RIGHT TO DISMISS STUDENTS

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable to do so.



**RIGHT TO CHANGE RULES**

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

**PROPERTY RESPONSIBILITY**

The University is not responsible for the loss of personal property in any University building. A "Lost and Found" Office is maintained in the Student Union.



## GRADUATE STUDY

THE SCHOOL OF ENGINEERING AND APPLIED SCIENCE offers graduate study leading to the degrees of Master of Science, Master of Engineering Administration, and Doctor of Science.

Graduate study is rapidly becoming a necessity for the engineer or applied scientist. Through graduate study tomorrow's leaders are developing today the increased knowledge and capability demanded by the advances in engineering, science, and administration. Industry and government eagerly seek those with advanced knowledge, analytical skill, and ability.

In the graduate programs, as in undergraduate study, the educational philosophy of the School is to increase the knowledge and understanding of the individual student by concentration on principles and their application rather than by encyclopedic coverage of techniques and specialized detail. Each Master's program is individually planned according to the student's preparation and needs. Included are a minimum of 24 semester hours of courses in his major area and related fields, a Master's thesis, and a Master's Comprehensive Examination. Doctoral programs generally require a minimum of 30 semester hours of course work beyond the Master's level, a research program, a dissertation, and a final examination.

Graduate study may be undertaken in any field of engineering or applied science in which the School has adequate facilities and resources. The student also may select courses in other departments of instruction of the University in order to serve specific needs or objectives.

### The Master's Programs

#### THE DEGREE OF MASTER OF SCIENCE

THE OBJECTIVE OF THIS DISCIPLINE is a substantial comprehension of principles and methods for their use, as applied in modern technology. Increased understanding and its use in solving engineering problems are sought, rather than a breadth of familiarity with applications and techniques.



The student's program may provide for broad coverage in a variety of fields or may be designed to give some degree of specialization in a particular area, as determined by conference. The specialization available is indicated by the courses of instruction (see pages 59-75).

The level of the courses ordinarily requires as prerequisite the satisfactory completion of at least one undergraduate course in mathematics beyond the first course in ordinary differential equations and at least one in the area of the graduate course to be undertaken.

### THE DEGREE OF MASTER OF ENGINEERING ADMINISTRATION

The objective of this discipline is to develop an understanding of the principles and a competence in the practices of administration as applied to engineering and scientific activities.

This degree program is for engineers and scientists who have or anticipate responsibility for administration of engineering or scientific activities. Analysis, case study, and quantitative approaches are emphasized in addition to the technical theories of administration. A program of study (an integrated sequence of courses) is prescribed for each candidate in conference with an adviser.

### ADMISSION TO GRADUATE STUDY

Admission to graduate study toward a Master's degree requires a Bachelor's degree from a recognized institution and evidence of capacity for productive work in the field selected, as indicated by undergraduate grades, Graduate Record Examination scores, and similar data.

Applicants who have significant deficiencies in their preparation may qualify for admission to graduate study by taking prescribed undergraduate courses. In some cases such study may be carried on in addition to a limited graduate program. In no case may the undergraduate courses fulfill any part of the requirements for the graduate degree. *Admission to graduate study does not admit the student to degree candidacy.*

In addition to the requirements for admission to graduate study, the applicant for admission to the Master of Engineering Administration program must have an adequate knowledge of the principles of human relations, the fundamentals of accounting, and the fundamentals of statistics. This requirement can be met by the successful completion of appropriate undergraduate courses specified by the Department Chairman. Credit for these prerequisites is not applicable toward the Master's degree. The student should have a working knowledge of calculus.

### ADMISSION PROCEDURE

Forms for application for admission are available at the School or the Office of Admissions of the University. They must be submitted, together with the application fee of \$25, to the Admissions Secretary, Room 100, Tompkins Hall of Engineering, The George Washington University, Washington, D. C. 20006, no later than September 1, for the fall semester; December 15, for the spring semester; and May 1, for the Summer Sessions. The applicant must request



each educational institution attended since high school graduation to send an official transcript of his record directly to the Admissions Secretary. If the applicant has completed the Graduate Record Examination, he should request that his scores be sent to the School. The applicant will be notified by mail when a decision on his admission has been made.

All inquiries and correspondence relative to admission should be directed to the Admissions Secretary.

### ADMISSION TO DEGREE CANDIDACY

Applicants are admitted initially to graduate-student status. During this initial period the student must qualify for degree candidacy by satisfying all prerequisite requirements and completing the graduate level courses, usually three, specified in his letter of admission to graduate study.

Upon completion of these requirements the student submits to the chairman of the department of his major field an application for admission to candidacy for his desired degree. Application forms are obtained from the School Office, Room 100, Tompkins Hall of Engineering. The program the student wishes to follow as preparation for his Master's Comprehensive Examination must be stated on the admission to candidacy form and approved by the faculty adviser under whom the student desires to work. Upon approval by the department chairman, an official letter of admission to degree candidacy with an approved study program is sent to the student and the faculty adviser.

*Study beyond three graduate level courses completed without admission to degree candidacy will not be credited toward the Master's degree requirements.*

### ADVANCED STANDING

Graduate courses completed before admission to study toward a Master's degree are not transferable for degree credit. They may, however, be considered in planning individual programs. Course work to satisfy degree requirements in another school or college of the University may not be applied toward a degree in this School. Courses completed while a student in the Division of University Students are not accepted for credit in Master's programs.

### REGISTRATION

A graduate student may register for classes when he presents an official letter of admission or his student identification card from the previous semester. No registration is accepted for less than a semester or one summer session.

Concurrent registration in this School and in another institution not a member of the Consortium of Universities of the Washington Metropolitan Area, Inc., or another division of this University requires the written permission of the Deans concerned, *prior to registration*. Allowance of credit for work done concurrently at another institution is at the discretion of the Dean.

Dates and hours of registration are stated in the Calendar, page 5, and in the *Schedule of Classes* published in advance of each semester.



### MASTER'S THESIS

The degree candidate must submit an acceptable thesis to demonstrate his ability to make independent use of the knowledge and discipline of thought acquired and developed by graduate study, to furnish objective evidence of constructive power in a given field, and to demonstrate that he can communicate the results of his work in writing. Work of a suitable character for which the student has professional responsibility may be considered, whether done on or off campus, provided no significant amount of work is completed without faculty supervision.

The thesis is the exclusive responsibility of the student. He may consult an adviser, but the adviser assumes no responsibility for the thesis.

The acceptability of the thesis is determined exclusively by the final comprehensive examination committee.

As a part of registration for the thesis course, Engineering 299, the candidate must submit to the Dean (on the form obtainable at the School Office) his thesis area, approved by his faculty adviser. He must submit his thesis title to the Dean, on the form available in the School office, by the date stated in the calendar for the semester in which he enrolls in the thesis course, Engineering 300. The thesis in final form must be submitted to the Dean by the stated date of the semester in which the candidate enrolls in Engineering 300—in every case within a calendar year of registration for Engineering 299. In case of failure to submit the final thesis as specified above, the student's candidacy and graduate study are terminated. Printed copies of detailed regulations regarding the form and reproduction of the thesis are available in the Office of the School. Accepted theses, with accompanying drawings, become the property of the University and are deposited in the University Library, where the duplicate copies are bound and made available for circulation. Permission to publish or adapt material in them must be secured from the Dean.

Candidates may enroll in the thesis course (299–300) one time.

A thesis may be submitted in final form one time. If the thesis is unacceptable to the Master's Comprehensive Examination committee the student's candidacy and graduate study are terminated.

### MASTER'S COMPREHENSIVE EXAMINATION

After completing his prescribed program and submitting his thesis, the candidate must pass a Master's Comprehensive Examination, to demonstrate substantial understanding of principles and methods and their use in the area of his interest. This Examination may be written, oral, or both, and it must be passed on the first attempt. In the event of failure, the student's candidacy and graduate study terminate.

### SUMMARY OF MASTER'S DEGREE REQUIREMENTS

*Scholarship.*—Grades of *B* or higher are required in all course work.

*Residence.*—A minimum of one year of full-time study, or the equivalent in part-time study, must be completed in the School.



*Program.*—The minimum program consists of 24 semester hours of approved graduate courses and a thesis.

*Thesis.*—An acceptable thesis must be submitted by the time specified.

*Master's Comprehensive Examination.*—The Examination may be oral, written, or both and must be passed on the first attempt.

### MASTER'S STUDY REGULATIONS

If a student knowingly makes a false statement or conceals material information on an application, registration card, or any other University document, his registration will be cancelled and he will be ineligible (except by special action of the Faculty) for subsequent registration in any unit of the University.

#### ATTENDANCE

The student is expected to attend every meeting of the course in which he is registered, fully prepared to carry on the work required. A student may be dropped from any course for undue absence. Excused absence must be arranged with the instructor.

#### SCHOLARSHIP

For Master's work, a minimum of 24 semester hours of graduate work with the grade of *B* or higher is required for graduation. Students who receive two grades of *F*, or three grades below *B*, are barred from further enrollment in graduate courses and, ordinarily, will not be readmitted to graduate study.

#### GRADES

Grades are indicated as *A*, excellent; *B*, satisfactory; *C*, passing; *F*, failing; and *CR*, credit for satisfactory thesis completion. Whenever a grade is not assigned, the symbol *I* (incomplete) or the symbol *W* (authorized withdrawal) is recorded.

An incomplete may be given at the instructor's discretion. The instructor must state in writing the conditions to be satisfied and the time allowed for making up the incomplete. An incomplete which is not removed within one calendar year is automatically changed to an *F*.

#### ACADEMIC DISHONESTY

A student found guilty of dishonesty by the Dean's Council will be suspended from the University. He will be deprived of credit for all courses in which he is enrolled during the semester in which the dishonest act occurs. A disciplinary grade of "Failure—Academic Dishonesty" will be recorded for each such course.



**TIME TO COMPLETE MASTER'S DEGREE REQUIREMENTS**

A full-time Master's candidate is allowed a maximum of three calendar years to complete all degree requirements, from the date of his first graduate-student status registration in prerequisite or graduate courses. A part-time Master's candidate is allowed a maximum of five calendar years. In both cases the time limit applies regardless of the granting of leave of absence.

Students who do not complete degree requirements within the allowed time have their graduate status terminated. They may be readmitted to graduate status under conditions specified by the department chairman and approved by the Dean.

**CHANGES IN PROGRAM OF STUDIES**

A student may not make any changes in his approved program of studies without the approval of the Dean. Requests for change in class registration must be made on forms provided in the School Office.

During the seven days following the first day of classes of a semester, courses may be added to the student's program with the approval of the instructor and the Dean.

Courses may be dropped without academic penalty only within the first four weeks of a semester, with the approval of the instructor and the Dean.

**WITHDRAWAL**

Application for withdrawal from the University or from a class must be made in writing to the Dean. Notification to an instructor is not an acceptable notice.

A student who withdraws, or is otherwise absent from the School for one semester or more, must apply for readmission and, if readmitted, may continue his work only under the requirements and regulations in force at the time of his readmission.

Withdrawal from a course or from the University, without academic or financial penalty, requires the permission of the Dean. Permission to withdraw from the University will not be granted a student who does not have a clear financial record.

In exceptional circumstances the Dean may authorize withdrawal without academic penalty after the first four weeks of a semester. In all cases financial regulations governing withdrawal remain in full effect.

All charges for courses dropped without the approval of the Dean must be met by the student.

**CREDIT**

Credit toward a Master's degree is given only after registration for and satisfactory completion of the required work of a course. A student who takes a course as an auditor may not take the same course later for credit.



### TRANSCRIPTS OF RECORD

Official transcripts of student records are issued on request of the student or former student who has a clear financial record. A fee of one dollar is charged for each transcript.

### CONTINUOUS REGISTRATION

Degree candidates are expected to maintain continuous registration until all degree requirements are satisfied. Students who have completed course registration (including the thesis) maintain continuous registration by paying the "continuous registration" fee (see page 41). By failing to register for one semester or more, the student breaks his registration and must be readmitted. The procedure for readmission for Master's candidates is the same as that for undergraduates (see page 18). A "Readmitted Student" is required to satisfy the curriculum requirements existing at the time of his readmission. Students must be registered during the summer if they elect to take courses, are taking required examinations, are receiving guidance toward theses or dissertations, or are expecting to graduate at the end of the Summer Sessions.

### APPLICATION FOR GRADUATION

Application for graduation must be filed and the appropriate fee paid at the time of registration for the semester or summer session during which degree requirements will be completed. Students completing degree requirements during the Summer Sessions will be awarded diplomas (no formal convocation) September 30, *provided* they have completed all degree requirements and have applied for graduation as a part of registration for the Summer Sessions.

### ATTENDANCE AND CONDUCT

The University reserves the right to refuse to confer a degree upon a candidate whose attendance or conduct has been unsatisfactory.

### RIGHT TO DISMISS STUDENTS

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable to do so.

### RIGHT TO CHANGE RULES

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.



**PROPERTY RESPONSIBILITY**

The University is not responsible for the loss of personal property in any University building. A "Lost and Found" Office is maintained in the Student Union.

**The Doctoral Program**

THE SCHOOL OF ENGINEERING AND APPLIED SCIENCE offers a program of advanced study and research leading to the degree of Doctor of Science. This program is limited to recognized fields in engineering or applied science in which a scientific discipline exists and for which the University has adequate resources.

The Doctoral discipline is designed to prepare the student for a career of creative scholarship by providing a broad background of knowledge and an understanding of research methods. It requires study of interrelated fields of learning as well as original research in the field of central interest.

The discipline for the degree is divided into two stages. The first—made up of a study of interrelated fields of learning which support the general area of research concentration—culminates in the qualifying examination. The second—composed of research investigation of a particular subject in a special field and the presentation of such research findings in a written dissertation—culminates in the final examination.

**ADMISSION TO DOCTORAL STUDY**

The applicant must have adequate preparation for advanced study, including a satisfactory Master's degree, or the equivalent, together with acceptable personal qualities and a capacity for creative scholarship. He must have capabilities and interests beyond the mere assimilation of organized materials in formal courses of instruction. Originality of mind combined with balanced judgment and accuracy in observation or experiment are necessary to the successful applicant.

**APPLICATION FOR ADMISSION**

Well in advance of the opening of the semester for which the student seeks admission, he should correspond with and preferably have a personal interview with the Dean or department chairman of his proposed field of study, to discuss the University's facilities for guidance in this field, the applicant's qualifications, and the possibilities of an effective doctoral program. If an application for admission is indicated, the student will be advised concerning the details of application procedure.

**LANGUAGE REQUIREMENTS**

A reading knowledge is required of two foreign languages important in the student's field of interest. One language examination must be passed at the time of beginning doctoral study. The second must be passed before admission to



the qualifying examination and within one year of the start of study for the qualifying examination.

### STUDY FOR QUALIFYING EXAMINATION

Upon admission to study for the qualifying examination the student is assigned a faculty adviser, who directs his studies. The adviser assigns fields of learning to insure the student's breadth of knowledge and support research in his central field, advises him concerning the scope and content of these fields of study, and guides him in preparation for his examination. A minimum of 30 semester hours of formal study beyond the Master's work is required prior to the qualifying examination. This requirement does not include any deficiencies to be made up or language courses taken to meet the language requirement.

The purpose of the qualifying examination is to ascertain that the student's breadth of background and intellectual development are adequate to support doctoral research and investigation in his central field. The qualifying examination is both written and oral and usually extends over a period of six days. It is given by a special committee consisting of members of the Faculty and other specialists. Upon favorable report of the examiners to the Dean the student is admitted to candidacy for the degree, to pursue his specialized study and research under the supervision of a designated member of the Faculty.

*The examination is the sole test of the student's ability to qualify for admission as a candidate for the degree, and to enter the second stage of his doctoral discipline.*

### RESEARCH, DISSERTATION, FINAL EXAMINATION

The student admitted to candidacy for the degree requests as Director of Research the member of the Faculty under whom he wishes to conduct his research. The Faculty member may accept or reject such request. The research is arranged by the Director and approved by the Dean. Throughout the remainder of the doctoral program, the candidate is responsible solely to his Director, in his research and in the presentation of his dissertation. Work on the dissertation is equivalent to a minimum of 24 semester hours.

#### THE DISSERTATION

A dissertation is required as evidence of ability to perform scholarly research and to interpret and present its results.

The candidate must submit to the Dean three complete copies of the dissertation and two original copies of an abstract (not to exceed 600 words) of his dissertation no later than the date specified in the calendar. One copy of the abstract is for inclusion in the Abstracts of Doctoral Dissertations issue of the University Bulletin; the other is sent to University Microfilms, Inc., for inclusion in their monthly publication "Dissertation Abstracts" which is distributed nationally.

One copy of the dissertation is also sent to University Microfilms, Inc., where the master negative microfilm is retained. A positive microfilm copy is sent



by University Microfilms, Inc., to the Library of Congress for its file. Printed copies of detailed regulations regarding the form and reproduction of the dissertation, preparation of the abstract, and services offered by University Microfilms, Inc., are available in the School Office. The successful candidate for the doctorate is required, before receiving his degree, to pay a fee to cover the expense of printing the abstract of his dissertation, and for the basic service rendered by University Microfilms, Inc. Accepted dissertations, with accompanying drawings, become the property of the University and are deposited in the University Library, where the duplicate copies are bound and made available for circulation. Permission to publish or adapt material in them must be secured from the Dean.

#### THE FINAL EXAMINATION

Upon approval of the dissertation by the Director, the candidate is presented for his final examination.

The final examination is oral and is open to the public. The candidate must demonstrate a mastery of his special field of interest and of the materials and techniques used in the research. The committee of examiners includes members of the Faculty competent in the research field or in closely related subjects and may also include qualified experts brought to the University especially to participate in the examination. When the candidate satisfies the examining committee concerning the high quality and originality of his contribution to knowledge as well as his mastery of the scholarship and research techniques of his field, the committee of examiners recommends him for the degree of Doctor of Science.

#### RESIDENT AND CONTINUOUS STUDY

All of the work for the degree must be done in residence (on the campus), except when special permission is granted to conduct research in an approved off-campus facility. The student must maintain "continuous registration" in the School, even when granted a leave of absence. Failure to do so breaks the student's registration, and he must apply for readmission to doctoral study under whatever new conditions and regulations are set up by the department chairman and approved by the Dean.

There is no formal regulation concerning the minimum amount of time to be spent in preparation for the qualifying examination or as a candidate engaged in doctoral research. However, the qualifying examination must be completed within five years of the date of admission, and the entire degree program must be completed within seven years. After admission the student may apply for his qualifying examination whenever his adviser believes that he is prepared to take it; his research and specialized study may be undertaken with whatever concentration of time meets the approval of his Director of Research. Normally a minimum of two years of full-time study and research is spent in meeting the requirements for the degree.



## THE CENTER FOR MEASUREMENT SCIENCE

THE CENTER, UNDER THE DIRECTION of the School of Engineering and Applied Science, is a cooperative activity of the University, industry, and government providing education, research, and service programs related to measurement. It was established by the University in 1960.

The principal, but not exclusive, activities of the Center are:

- The education of persons for careers in measurement science;
- The development and improvement of measurement, standardization, and calibration techniques, apparatus, and data—with particular reference to high precision;

- The provision of staff and facilities to industry for research and consultation on measurement problems in industry, including the maintenance of primary standards of measurement directly traceable to the national standards;

- The publication of results of research, manuals of practice and procedures, and information related to measurement science.

The Center maintains relations with industry and government through its Associate Program, in which interested individuals, companies, or other organizations may participate. The mutual communication, collaboration, and support made possible by this program bring vitality to the Center activities and insure attention to the needs of industry and government.

Through these and other activities the Center serves as a source of personnel competent in measurement science, as an instrument for collaborative research on measurement problems, and as a service organization providing expert capability to industrial and government organizations in the solution of their measurement problems.

### THE EDUCATION PROGRAM

The Education Program of the Center consists in part of curricula offered by the School, which prepare the student to assume responsibilities in the field of measurement science. The curricula are integrated, to permit a student to terminate his formal education at any level, or to proceed to the next level. Programs lead to the degrees of Bachelor of Science, Master of Science, and Doctor of Science.



In addition to the degree programs, the education program includes seminars, special conferences, and short courses offered from time to time.

### RESEARCH PROGRAM

The research program of the Center includes all aspects of research and development related to measurement science. Research and/or development may be undertaken as independent studies by staff members for the Center, as studies for a sponsor under contract, or by personnel of Associates of the Center assigned to the Center to undertake the specific work. Associates receive publications of the Center; certain publications may be restricted in distribution.

### SERVICE PROGRAM

The Center arranges for consultation and assistance of the Faculty and Staff and the use of the facilities of the Center in connection with specific problems in measurement. The program is restricted to the use of the Associates of the Center.

The Service Program also makes it possible for Associates to engage the various resources of the University, through the Center, as may be desirable and feasible, in solution of their problems in measurement.



## FEES AND FINANCIAL REGULATIONS

FEES PAID BY STUDENTS cover only a portion of the cost of the operation of the University. Income from endowment funds, grants, and gifts from alumni and friends of the institution make up the difference.

The following fees and financial regulations were adopted for the academic year 1967-68. (See page 41 for projected tuition increases for 1968-71.)

### Tuition Fees

For undergraduate study:

Full-time program (12 or more hours a semester).....	\$837.50
Part-time program, for each semester hour.....	57.00

For graduate study (except for those students registered before July 1, 1967, who wish to continue payments in accordance with the plan (see below) in effect prior to that date):

For each semester hour for which the student registers.....	57.00
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Doctoral students not enrolled under the payment plan in effect before July 1, 1967, are required to register for minimum hour-loads,\* as follows:

1. Full-time doctoral students must register for a minimum of 12 semester hours a semester until 24 hours of work have been completed beyond the qualifying examination; and a minimum of 4 semester hours a semester thereafter until the satisfactory completion of the final examination.
2. Part-time doctoral students must register for a minimum of 6 semester hours a semester until 24 hours of work have been completed beyond the qualifying examination; and for a minimum of 4 semester hours a semester thereafter until the satisfactory completion of the final examination.

For candidates for Master's degrees registered prior to July 1, 1967, who wish to continue payments according to the plan in effect prior to that date:

Total fee, including the Master's comprehensive examination† .....	1,675.00
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\* No minimum hour-load is required during the summer sessions.

† Any student admitted to Master's study may elect to pay the total fee at the beginning of his program or on a course-by-course basis at \$57 a semester hour until the total fee is paid.

Students completing payment of the total fee before completion of the required work (including thesis and comprehensive examination) will be granted registration on a "continuous registration—no charge" basis for one semester immediately following the semester in which tuition payment is completed.

Students requiring additional time for completion of required work after completion of payment of the total fee and the expiration of a semester "continuous registration—no charge" must register each semester and pay the normal "continuous registration" fee. See page 25 for regulation governing Military Leave.



For students registered for the degree of Doctor of Science prior to July 1, 1967, who wish to continue payments according to the plan in effect prior to that date:

For work leading to and including the qualifying examination*.....	\$1,625.00
For work leading to and including the final examination*.....	1,625.00

### Additional Course Fees

In certain courses additional fees, such as laboratory and material fees, are charged as indicated in the course descriptions. These fees are charged by the semester and, unless otherwise indicated, may be defrayed in two payments when the tuition is paid in this manner. Breakage of apparatus is charged against the individual student. When breakage is in excess of the normal amount provided for in the laboratory fee the individual student will be required to pay such additional charges as determined by the department concerned.

### Graduation Fees

Bachelor's, Master's, Doctor's degrees.....	\$25.00
	6.00

Fee for binding Master's Thesis.....	55.00
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### Fee for Microfilm Service and Printing Abstract of Doctoral Dissertation

### Residence Hall Fees (see page 49)

### Special Fees

Application fee (degree candidate), nonrefundable.....	25.00
Tuition deposit, nonrefundable:	
Charged each entering or readmitted student, except early decision freshmen .....	100.00
Charged each freshman admitted by early decision plan.....	200.00
Application for room reservation, nonrefundable:	
Charged each resident student, except early decision freshmen.....	100.00
Charged each resident student admitted by early decision plan.....	200.00
Admission tests (when required).....	6.00-12.00
Late-registration fee, for failure to register within the designated period....	15.00

\* If the tuition for the first stage is paid in full at the beginning of the first stage of the doctoral discipline, the candidate is entitled to five successive semesters on a "continuous registration—no charge" basis. If still more time is needed, the student must maintain continuous registration and pay the continuous registration fee.

If the tuition is paid in four installments at the rate of \$406.25 a semester at the beginning of the first stage of the doctoral discipline, no continuous registration fee will be charged if a third year is needed for completion of the first stage of the degree requirements. If still more time is needed, the student must maintain continuous registration and pay the continuous registration fee. If the tuition is paid in six installments at the rate of \$270.84 a semester and if still more time is needed, the student must maintain continuous registration and pay the continuous registration fee.

If the tuition for the second stage is paid in full at the beginning of the second stage of the doctoral discipline the candidate is entitled to three successive semesters on a "continuous registration—no charge" basis. If still more time is needed, the student must maintain continuous registration and pay the continuous registration fee.

If the tuition is paid in two installments at the rate of \$812.50 a semester at the beginning of the second stage of the doctoral discipline no continuous registration fee will be charged if a second year is needed for completion of this stage of the discipline. If the tuition is paid in four installments at the rate of \$406.25 a semester at the beginning of the second stage and still more time is needed, the student must maintain continuous registration and pay the continuous registration fee.



Change fee, for each change in program: dropping or adding a course, changing from one section to another within a course, change of status (from auditor to credit status or vice versa), and change in credit hours for a course .....	\$ 2.00
Withdrawal fee, charged in special cases.....	5.00
Service fee, for deferred payment plan (see "Payment of Fees" below).....	5.00
Reinstatement fee, for reinstatement after financial suspension.....	10.00
Continuous registration fee, to maintain "continuous registration" status during any semester of absence from the University or after completion of tuition requirements*—due and payable on the official days of registration .....	57.00
Engineers' Council fee, charged each student in the School of Engineering and Applied Science for each semester or any part thereof except the summer term .....	1.50
For each examination to qualify for advanced standing and for each special examination .....	5.00
English test for foreign students (when required).....	5.00
Laboratory checkout fee, for failure to check out of Chemistry laboratory by the date deadline set by the instructor†.....	3.00
Transcript fee, for each transcript of record.....	1.00

Registration in the University entitles each student to the following University privileges: (1) the services of the Placement Office; (2) the use of University library; (3) gymnasium privileges; (4) admission to all athletic contests, unless otherwise specified; (5) subscription to the *University Hatchet*, the student newspaper; (6) admission to University debates; (7) medical attention and hospital services as described under Health Services. These privileges terminate and a student is no longer in residence when he withdraws or is dismissed from the University.

### PROJECTED TUITION INCREASES 1968-71

In order that students and their parents may plan more realistically for a total four-year period, tuition increases for the academic years 1968-69, 1969-70, and 1970-71 have been estimated as follows:

Increase by year (full-time undergraduate students):	
1968-69.....	75.00
1969-70.....	100.00
1970-71.....	100.00
Increase by semester hour (graduate and part-time undergraduate students):	
1968-69.....	3.00
1969-70.....	4.00
1970-71.....	4.00

It is not possible to project future economic data with certainty. Barring unforeseen developments, however, the above listed tuition schedule will be followed.

\* Payment of the continuous registration fee entitles the student who is granted leave of absence to return and continue his work toward a degree under the academic requirements which were in force at the time of his first registration. The continuous registration fee applies toward neither tuition fee nor residence requirements for the degree. (See also footnotes (†) page 39, (\*) page 40. See page 25 for regulation governing Military Leave.

† A student who drops a chemistry course before the end of the semester must check out of the laboratory at the next regular laboratory period.



### PAYMENT OF FEES

All fees are payable at the Office of the Cashier. No student is permitted to complete registration or attend classes until all fees are paid.

Tuition and fees for each semester are due and payable in full at the time of each registration.

However, a student registered for six semester hours or more may sign a contract with the Student Accounts Office at the time of each registration permitting him to pay one-half of the total tuition and fees (except for fees payable in advance) at the time of registration and the remaining half on or before November 1, 1967 (for the fall semester) and March 13, 1968 (for the spring semester). A service fee of \$5 will be due and payable at the time of registration for the use of this deferred payment plan. The University will not obligate itself to notify the student in advance of the payment-due date for the second half of the semester charges. Students who fail to make any payment when due will be automatically suspended and may not attend classes until they have paid all accrued fees and a \$10 reinstatement fee and have been officially reinstated by the Student Accounts Office.

A student suspended for failure to meet payments when due may not be reinstated for the semester after two weeks from the date of suspension. Applications for reinstatement are to be made to the Student Accounts Office.

An auditor pays all fees chargeable to the student registered for credit except the late registration fee.

Because many parents may wish some option in meeting and financing all or part of the cost of a college education, the University offers educational loan plans through the Girard Trust Exchange Bank in Philadelphia, Pennsylvania; Funds for Education, Inc., Manchester, New Hampshire; and The Riggs National Bank, Washington, D. C.

Although similar in purpose, these plans vary somewhat in coverage and conditions. One-year and multiple-year plans are available. Insurance covering the life and health of the sponsor is provided through these plans.

Individuals over twenty-one years of age who are employed full-time are also eligible to apply. They may sponsor their own contracts, provided they meet the conditions specified by the plan for which they are applying.

Brochures and applications describing these plans are available in the Office of Student Financial Aid.

### WITHDRAWALS AND REFUNDS

Applications for withdrawal from the University or for change in class schedule must be made in person or in writing to the Dean of the School. Notification to an instructor is not an acceptable notice (see "Withdrawal," pages 23 and 32).

In authorized withdrawals and changes in schedule, cancellations of semester tuition charges and fees will be made in accordance with the following schedule:

#### 1. Complete withdrawal from the University:

##### Fall Semester

Withdrawal dated on or before September 22, 1967 .....	90 per cent
Withdrawal dated September 25 to October 6, 1967 .....	75 per cent



Withdrawal dated October 9 to October 20, 1967 .....	50 per cent
Withdrawal dated after October 20, 1967 .....	none

*Spring Semester*

Withdrawal dated on or before February 2, 1968 .....	90 per cent
Withdrawal dated February 5 to February 16, 1968 .....	75 per cent
Withdrawal dated February 19 to March 1, 1968 .....	50 per cent
Withdrawal dated after March 1, 1968 .....	none

2. For a *change in status from full-time to part-time student* or for *partial withdrawal* by a *part-time student*, the above schedule applies to the difference in charges between the original program and the adjusted program continuing in effect.
3. A student enrolled in a full-time program who drops or adds a course and continues to be in a full-time program will have no financial adjustments of tuition made other than those involving course fees.

In no case will tuition be refunded or reduced because of absence from classes.

Payment applies only to the semester for which a registration charge is incurred, and in no case will this be credited to another semester.

Authorization to withdraw and certification for work done will not be given a student who has not a clear financial record.

Students are encouraged to provide their own cash funds until they can make banking arrangements in the community.



## FINANCIAL AID

THE GEORGE WASHINGTON UNIVERSITY has a program of financial assistance for undergraduate students (including transfer students) of scholarships, low-interest long-term loans, work scholarships, or any combination of these resources. Financial aid is awarded on the basis of the student's scholastic record, financial need, and qualities of leadership and character.

Renewal of any type of financial aid for succeeding years will depend upon the student's academic record and need. Awards may be altered or withdrawn at any time if the academic record of the student is unsatisfactory.

Scholarships are awarded for the academic year. Application must be filed by entering freshmen by February 1 preceding the academic year of the award.

Applications and supporting credentials for all other types of financial aid must be filed by February 1 (entering freshmen), April 1 (enrolled undergraduate or entering transfer students) preceding the academic year of the award for the fall semester; by October 31, for the spring semester; and by May 1, for the summer session\*.

Credentials required of all financial aid applicants:

1. *Application for Financial Aid* forms for entering freshmen and transfer students will automatically be forwarded to the student when the Office of Admissions notifies the Office of Student Financial Aid that Application for Admission has been received and the student indicates he will apply for financial aid. Students presently enrolled in the University may obtain forms upon request, at the Office of Student Financial Aid.

2. *Parents' Confidential Statement* (Code 5246) must be filed by all applicants who are under twenty-five years of age, married or single, dependent on or independent of parental support. Students who are applying for aid for the academic year (September-June) should file the Parents' Confidential Statement with the College Scholarship Service, Box 176, Princeton, New Jersey or Box 1925, Berkeley, California, no later than ten days prior to the deadline dates for application, see dates above. Students applying for financial aid for the spring semester and/or the summer session *only* should file the Parents' Confidential Statement directly with the Office of Student Financial Aid, The George Washington University.

\* A Summer Sessions student is eligible for consideration only if he is enrolled in this University for at least 8 semester hours in the immediately preceding spring semester or has applied for financial aid for the following fall semester.



Entering freshmen may obtain forms at local secondary schools or upon request to the College Scholarship Service. All other applicants may obtain forms, upon request, at the Office of Student Financial Aid.

An undergraduate transfer student is not eligible for scholarship funds until he has completed one full semester (13 hours) at this University with a minimum average of *B* (3.0). A transfer student is, however, immediately eligible for other types of financial aid.

### SCHOLARSHIPS

Scholarships are awarded for the academic year unless otherwise specified and are credited in equal parts for each semester. Each holder must carry a full schedule of academic work during the period for which the scholarship is awarded.

Applications should be submitted on or before February 1, for the following academic year and, unless otherwise specified, should be addressed to the Office of Student Financial Aid. Awards are made during the month of April. All scholarships begin with the fall semester.

The following scholarships are limited to students in the School of Engineering and Applied Science. The University offers many others which are open to engineering students. A special bulletin containing a complete list and full information concerning fellowships and scholarships may be obtained from the Office of Student Financial Aid, The George Washington University, Washington, D. C. 20006.

*Association of Federal Communications Consulting Engineers Scholarship* (1958).—A full-tuition scholarship, including laboratory fees and books. Available to a student of good character, promise, and leadership working toward the degree of Bachelor of Science (Electrical Engineering).

*Frederick Albert and Alma Hand Britten Scholarships* (1959).—Bequest of Alma Hand Britten for scholarship assistance to students entering the School of Engineering and Applied Science who would not otherwise be able to pursue such professional study. Available for undergraduate and graduate study.

*Henry Harding Carter Scholarship* (1896).—Established by Maria M. Carter in memory of her husband to aid a deserving student who is preparing for the civil engineering profession. Available to students working toward the degree of Bachelor of Science (Civil Engineering).

*Henry Parsons Erwin Scholarship* (1955).—Established by Helen B. Erwin as a memorial to her husband, a former Trustee of the University. A partial scholarship for a student in Engineering or Applied Science.

*Louis E. Giles Memorial Scholarships* (1966).—Bequest of Susie E. Giles in honor and memory of her husband for scholarships to undergraduate and graduate students in the School of Engineering and Applied Science requiring financial assistance.

*The George Washington University Board of Trustees Scholarships*.—Full- and partial-tuition undergraduate scholarships which will begin in the fall semester and extend for four successive academic years, provided the holder maintains a *B* average, as well as a high standard of deportment, and continues to be in financial need. Candidates must plan to select a curriculum leading to a Bachelor's degree.

\* This scholarship is renewable and is, therefore, not available each year for award to an incoming freshman.



**FELLOWSHIPS AND ASSISTANTSHIPS**

The following fellowships, graduate scholarships, and assistantships are available. Admission to graduate study is a prerequisite for consideration. Unless otherwise specified, a letter of application should be submitted not later than March 1 preceding the period for which the award is to be made. It should be directed to the Dean of the School and addressed to The George Washington University, Washington, D. C. 20006.

*University Teaching Fellowships.*—Assigned for the academic year. The applicant is expected to be a prospective candidate for a Doctoral degree. Each teaching fellow receives an annual stipend (on a nine-month basis) of up to \$2,400 plus tuition and laboratory fees for whatever schedule of study or research his fellowship duties permit him to carry. Tuition and laboratory fees may not exceed those applying to half-time study. Stipends vary with the work load of the individual teaching fellow. Normally a University teaching fellow renders half-time service in classroom or laboratory assignments. Application should be made to the Dean.

*Graduate Teaching Assistantships.*—Open to candidates for the Master's degrees. Each graduate teaching assistant renders a designated unit of service, and receives, depending upon his teaching or laboratory assignment, up to \$2,400 on a nine-month basis plus tuition and laboratory fees for the program of studies which the duties of his assistantship permit him to carry. Tuition and laboratory fees may not exceed those applying to half-time study. Application should be made to the Dean.

*National Aeronautic and Space Administration Predoctoral Traineeships.*—Traineeships, including tuition and stipends of from \$2,400 to \$2,800 (on a twelve-month basis), depending on the stage of the doctoral study, are available in the fields of the physical sciences, engineering, mathematics, statistics, economics, and business. Application should be made to the Graduate School of Arts and Sciences, The George Washington University, Washington, D. C. 20006, prior to March 15, for the following academic year.

*National Science Foundation Cooperative Graduate Fellowships.*—Fellowships at \$2,400 for twelve months or \$1,800 for nine months, with tuition waived, are available in the mathematical, physical, medical, biological, and engineering sciences and in certain other fields regarded as employing scientific methods. Application should be made to the Graduate School of Arts and Sciences not later than November 1 for the following year.

**LOAN FUNDS**

The following loan funds are available to students in the University in accordance with the qualifications placed thereon by the donors. Students should direct inquiries to and file applications with the Office of Student Financial Aid. Applicants for a National Defense Student Loan or a United Student Financial Aid must file a *Parents' Confidential Statement* and an *Application for Financial Aid*. Deadline for submitting applications with supporting credentials is February 1 (entering freshmen), March 1 (graduate students), April 1 (enrolled undergraduate or entering transfer students) preceding the academic year of the award; October 31, for the spring semester; and May 1, for the summer ses-



sion\*. Application for admission to the University is a prerequisite for consideration.

*National Defense Student Loan Fund.*—This fund is available to full-time graduate or undergraduate students with a "superior academic background" who are in need of financial assistance. An undergraduate student may borrow for college expenses a sum not exceeding \$1,000 a year and, during his entire undergraduate program, a sum not to exceed \$5,000. A graduate or professional student may borrow a maximum of \$2,500 a year. The total loans made to such a student for all years, including any loans made to him as an undergraduate, may not exceed \$10,000.

*Warren Stickler Memorial Loan Fund (1966).*—A fund established by the Precision Measurements Association as a memorial to Warren Stickler is available to students in the Measurement Science curricula.

*United Student Aid Fund.*—This fund is available to full-time graduate and undergraduate students who have completed the freshman year and are in need of financial assistance. Undergraduates may borrow up to \$1,000 a year, graduate students may borrow up to \$2,000 a year—up to a combined total of \$4,000. Application must be made and approved through the University by the date deadlines stated above.

*John Brewster Willis, Jr., Loan Fund in Mechanical Engineering.*—A fund of \$1,515, established by Mrs. William L. Lane as a memorial to her nephew, John Brewster Willis, Jr., is available to Mechanical Engineering students (graduate or undergraduate) who are primarily interested in aeronautics.

### WORK SCHOLARSHIPS

In addition to loans and scholarships, the University provides work scholarships for qualified students. Work scholarships consist of part-time employment within the University, and are available only to students who have completed the freshman year.

### STUDENT EMPLOYMENT

The Student Placement Office maintains a registry of both full-time and part-time positions available in the Washington area for undergraduate and graduate students.

After registration, interested students may apply at the Student Placement Office, 2114 G Street, N.W., for interviews and referrals to positions for which they are qualified.

\* A Summer Sessions student is eligible for consideration only if he is enrolled in this University for at least 8 semester hours in the immediately preceding spring semester or has applied for financial aid for the following fall semester.



## STUDENT SERVICES AND ACTIVITIES

THE OFFICE OF THE DEAN OF STUDENTS develops policies and procedures to complement the University's formal instruction program. This program is implemented through the offices of the Dean of Men, Dean of Women, Health Services, Veterans Education, International Students, Psychological Clinic, and Student Activities.

### RESIDENCE HALLS

Complete information concerning the University's residence halls is available at the Office of the Dean of Men or the Office of the Dean of Women, The George Washington University, Washington, D. C. 20006.

Information concerning off-campus housing near the University may be obtained at the Office of the Dean of Men. The reservation of rooms in private houses must be made by students.

Admission to the University does not include a room reservation. The student will receive, with his notification of acceptance, a University residence hall brochure, an application for residence hall space, a medical examination form, and a declaration of intent to attend the University. The medical examination form must be completed by the applicant and his physician and returned to the University Health Services Office. The application for residence hall space must be accompanied by a \$100 nonrefundable housing deposit (\$200 for applicants admitted by early decision). Early decision students must submit the deposit by January 15. The housing deposit is credited toward the fall-semester room charge. Rooms are leased for the academic year, and payment must be made in advance of each semester.

All unmarried freshman men and women and sophomore women under the age of 21 who are enrolled for twelve or more hours of academic work during the fall or spring semester or six or more hours during a summer session are required to live in the University residence halls or at home with their parents or guardians. In exceptional cases permission to live elsewhere may be granted by the Dean of Men or the Dean of Women.



## 1967-68 Residence Hall Rates for Two Semesters

	Room and Food Service	Room only
<b>For Men:</b>		
Adams Hall		
double room (upperclassmen) .....	\$1,050	\$500
triple room (freshmen) .....	1,000	450
Calhoun Hall (upperclassmen) .....	1,050	500
Madison Hall (graduate and professional students).....	1,050	500
Mitchell Hall (freshmen)		
single room .....	1,150	600
double room .....	1,050	500
Welling Hall .....	970	420
<b>For Women:</b>		
Crawford Hall (upperclass women) .....	1,150	600
Graduate Women's Hall.....	1,235	685
Strong Hall (upperclass women)		
single room .....	1,235	685
double room .....	1,150	600
Thurston Hall .....	1,150	

## FOOD SERVICE

Residents of Thurston Hall and all resident freshman men under twenty-one are required to participate in the food service plan. The plan is optional for all other residents. All meal cards admit to the dining rooms in Thurston and Mitchell Halls. Residents of Adams, Calhoun, Madison, Welling, Crawford, and Strong Halls are given preference for the use of the dining room on the second floor of the Student Union. Residents of Thurston and Mitchell Halls may use the Student Union dining room only by special permission, which is granted those whose schedules allow very limited dining periods. Well-balanced meals are served cafeteria style seven days a week (20 meals). Food service payment does not cover University holidays or vacation periods.

## HEALTH SERVICES

The Health Services Staff assists students with their medical needs by advice and treatment, by proper referral when necessary, and by cooperation with other physicians. For medical emergencies and health consultations there is, on the campus, a Student Health Clinic open from 9 a.m. to 10 p.m., Monday through Friday, during the academic year and Summer Sessions, with physician and nurse in attendance. There is also a rest room for women, with a graduate nurse in charge. For night and week-end emergencies, students may go to the emergency room of the University Hospital for treatment. The basic fee for this visit will be paid by the Health Services, and all other charges will be the responsibility of the student. This arrangement is for emergency care only.

Medical privileges include (1) physical examination\* of all applicants for courses in Physical Education who lack reports, approved by the Office of

\* A charge for a special physical examination is made by the University if a student fails to appear for a physical examination during the period set for this purpose.



Health Services, of examinations by home physicians; (2) three visits in any one illness by a member of the Health Services Staff, office or residence (District of Columbia); (3) hospitalization, including board and nursing, in the University Hospital for not more than one week during any twelve-month period—the necessity to be determined by the Director of Health Services\*. All additional hospital charges for operating room, anesthetics, laboratory, X-ray, medications, or any special services must be paid by the student. Expenses incurred for examinations and treatment by specialists, such as eye refraction and provision of glasses; orthopedic examinations and application of cast or other appliance; laboratory and X-ray work; and surgical operations must be paid by the student.

These medical benefits apply only to illness or disability incurred while currently enrolled in the University. They do not apply to illness or disability incurred between the last day of examinations for a semester or summer session and completion of registration for the next semester or summer session.

The student is allowed, if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

Rules: (1) the Director of Health Services is empowered to limit or deny the medical benefits where, in his discretion, a student has, by his misconduct or breach of the rules of the University, made himself ineligible; (2) the Director of Health Services has authority to determine the necessity and length of hospitalization; (3) a student not currently enrolled or one who has severed his connection with the University is ineligible for medical benefits; (4) a student intending to train for an athletic team is required to pass a thorough examination at the beginning of each semester; (5) hospitalization is not available to those students availing themselves of other hospitalization coverage for the same illness.

The University is not responsible for injuries received in intercollegiate or intramural games, or in any of the activities of the departments of Physical Education, Health, and Recreation.

#### HEALTH AND ACCIDENT INSURANCE

In addition to the above services, the Health Services Staff has arranged for Health and Accident Insurance, on an elective basis, for all full-time students. This policy covers the participant for 12 months, whether at home, at the University, or elsewhere.

Current yearly cost is \$26.40 payable at the fall registration. Arrangements can be made to pay in two installments of \$13.20 at the fall and spring registrations.

This policy contract is between the individual student and the insurance carrier and is accepted at any hospital or emergency room that accepts this type of medical work. Details of the policy are available at the Health Services Office.

#### VETERANS EDUCATION

The personnel of the Office of the Dean of Men act as advisers to veterans and war orphans and in a liaison capacity between the University and the Veterans

\* See rule (5) for exception.



Administration. This Office should be consulted concerning educational benefits before application is made to the Veterans Administration for certification. The Veterans Administration is at 2033 M Street, N.W., Washington, D.C. 20421.

#### WAR ORPHANS' EDUCATIONAL ASSISTANCE ACT (Chapter 35, Title 38, U. S. Code)

A child of a person who died of a disease or injury incurred or aggravated while on active duty in the Armed Forces, or a child of a person who has a permanent total disability resulting from such service, or a child of a person who died as a result of such a disability may be eligible for educational assistance under this act, if certain age requirements are met. In the case of a child who has not reached the age of majority, his guardian must make application for him to the Veterans Administration.

#### VOCATIONAL REHABILITATION (Chapter 31, Title 38, U. S. Code)

Disabled veterans desiring vocational rehabilitation under these laws should apply to the Veterans Administration for approval of their training objectives at least sixty days prior to registration.

#### VETERANS' READJUSTMENT BENEFITS ACT (Chapter 34, Title 38, U. S. Code)

A veteran who has served on active duty after January 31, 1955, or a person who is currently on active duty may be eligible for as much as 36 months of educational assistance under this act. Applications should be submitted to the Veterans Administration prior to registration.

#### PSYCHOLOGICAL CLINIC

The George Washington University Psychological Clinic, 718 Twenty-first Street, N.W., offers services which are available primarily to students enrolled in the University and secondarily to high school students and to adults in the community. The latter are selected by the Clinic in accordance with training and research interests of the Clinic Staff.

The services are designed to assist individuals in the evaluation of their educational, personal, and social lives; diagnose academic difficulties and provide remedial measures such as study habits instruction and programmed instruction; and refer individuals to qualified agencies for assistance with problems not handled by the Clinic. Individual psychotherapy is available.

The Clinic also provides special assessments including: diagnostic measures prescribed by the School of Engineering and Applied Science, admissions tests for the University and for other selected educational institutions, and some selected assessments for business and industry.

*Fees.*—For students who are currently registered as degree candidates in the University, the fee is \$10; for students currently enrolled in the University but not as degree candidates, the fee is \$40; for graduates of the University, \$40; for community clients, \$65. Fees for specialized testing are dependent upon the services involved. All fees are payable at the Office of the Clinic.



### THE READING CENTER

The Reading Center, 2018 Eye Street, N.W., offers individual diagnostic and corrective services for all levels: primary, elementary, secondary, and adult. In addition special reading improvement classes are conducted on the high school and adult level.

A complete diagnosis includes psychological tests; vision, hearing, and dominance tests; and the various reading and spelling tests. Results are interpreted, and a written report is presented in conference with the parents or the individual.

The special reading classes for high school students and adults are offered throughout the year at stated intervals. Special classes for study skills and spelling are also available. Emphasis is placed on improvement of vocabulary, speed, comprehension, and study skills. Machines such as the tachistoscope, rate accelerator, and controlled reader are also used for increasing speed of comprehension.

*Reading Clinic.*—The fee for individual diagnosis is \$50; for individual instruction, \$7 a lesson; for semi-individual instruction, \$5 a lesson; for instruction in small groups with common reading difficulties, \$4.50 a lesson.

*Reading Improvement.*—Classes are offered for students on the high school, college, and graduate levels. Students are grouped according to needs, and emphasis is placed on vocabulary, study skills, spelling, and speed of comprehension. The fee for full-time students currently registered in the University is \$60 for twenty lessons; for other clients, \$90 for twenty lessons.

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All fees are payable in advance at the Office of the Cashier.

### THE SPEECH AND HEARING CLINIC

The Speech and Hearing Clinic, Lisner Auditorium, 730 Twenty-first Street, N.W., offers diagnostic and corrective work for children and adults with such communication difficulties as stuttering, lisping, cleft palate, cerebral palsy, aphasia, foreign accent, voice, articulatory, and hearing problems.

*Fees.*—There is no charge for the initial diagnosis. The fee for individual instruction is \$10 an hour; for group instruction, \$5 an hour. Fees are payable at the Office of the Cashier.

### STUDENT UNION

The Student Union, 2125 G Street, N.W., and the Student Union Annex, 2127 G Street, N.W., are centers of student life on the University campus. The cafeteria on the first floor of the Union building serves breakfast, lunch, and dinner, as well as snacks. The second floor is reserved as a dining hall for resident students, and the third floor features a modern vendeteria and delicatessen. The University Ticket Office, on the first floor, handles the tickets for all nonathletic University events and outside events offering student rates. The Student Union Annex houses the Student Activities Office, which maintains information concerning student organizations and campus events. The meeting rooms and offices for the Student Council, other campus organizations, and student publi-



cations are also in the Annex. The facilities of the Student Union make it possible for the nonresident student to participate more fully in campus life.

#### UNIVERSITY BOOK STORE

The University Book Store is in a separate building at the quad entrance to the Union. The Book Store carries a wide selection of school supplies and sundry items in addition to text books for all courses.

#### DAVIS-HODGKINS HOUSE

The Davis-Hodgkins House, 731 Twenty-second Street, N.W., is the student center of the School, providing lounges, reading rooms, and student organization offices. The House provides convenient, comfortable facilities for the exchange of ideas and good fellowship.

#### INTERNATIONAL HOUSE

International House, 2129 G Street, N.W., is the campus center for students from foreign countries. It serves also as the headquarters of the International Students' Society which seeks to promote international friendship and understanding by welcoming to its membership students from all countries, including those from the United States.

The Adviser to International Students has his Office in International House and is available for consultation each day throughout the school week.

#### STUDENT PLACEMENT OFFICE

The Student Placement Office, 2114 G Street, N.W., provides assistance to degree-seeking students and alumni seeking full-time, part-time, temporary, or permanent employment. The Office maintains a registry of positions available in many fields, both locally and nationally, and refers qualified applicants for consideration. The Office administers the On-Campus Industrial and Government Recruitment Interview Program for seniors and graduate students, in which private companies, government agencies, service organizations, public school systems, and universities participate. Prospective teachers may establish permanent credentials files in the Student Placement Office. This service includes files for alumni seeking college and university faculty and administrative positions. The Office also provides individual counseling for students and alumni wishing career guidance.

#### STUDENT ACTIVITIES

The offices of the Dean of Students, Dean of Men, and the Dean of Women are responsible for all nonacademic phases of student life, such as student activities, social life, and housing. The deans are available at all times for individual counseling concerning personal adjustment to university life. All student activities are coordinated through the Student Activities Office in the Student Union Annex. This Office operates under the direction of the Dean of Students.



## STUDENT GOVERNMENT

*Student Council.*—The University believes in encouraging the development of a sense of civic responsibility in its students by delegating to them such authority in student activities as is consistent with established policy and regulations. To this end, the organization of the University includes the Student Council, which, under the guidance of the Dean of Students, is responsible for the conduct of all student activities. The Student Council is elected annually by the student body.

*Committee on Student Life.*—The major function of the Committee on Student Life is to review, with authority to reverse, any act of the Student Council or of any other group engaged in extracurricular activities.

A secondary function is advisory. The Committee may offer recommendations to the Student Council on which the Council must act at its next regular meeting. It may also make recommendations to the President of the University at his request or on its own initiative.

Despite its broad powers, the Committee acts only when it believes a vital interest of student life at the University has been overlooked. The Committee, appointed annually by the President, is composed of 13 members, at least 6 of whom are students and at least 6 faculty members.

## ELIGIBILITY FOR STUDENT ACTIVITIES

Any student registered in the University is eligible to participate in nonathletic student activities of the University; however, a student having a scholastic average of less than 2.00 is not eligible to participate in student activities.

The rules and policies of the Southern Conference govern participation in intercollegiate athletics.

## THE ENGINEERS' COUNCIL

The Engineers' Council is the student governing body for the School of Engineering and Applied Science, composed of elected representatives from each level class and from the graduate student body, from each student organization in the School, the Business Manager of the *Mecheleciv*, and the House Manager of the Davis-Hodgkins House. The purpose of the Council is to provide liaison between the student body of the School and the Faculty, Administration, and Student Government of the University in all matters affecting the general interests and welfare of the student body, the School, or the University. The Council is maintained financially by the Engineers' Council Fee paid by each student in the School, and sponsors the engineers' student magazine, *Mecheleciv*; the Engineers' Mixers; Engineers' Ball; and the Annual Christmas Tree Ceremony in the University Yard. Council meetings are open to all students in the School.

The Council acts as the directing body for *Mecheleciv*, which is published six times a year and is free to all students in the School. This magazine includes campus and alumni news, a calendar of events, news of the student organizations, and articles on engineering by students and faculty members. The magazine is published by a student Board of Editors and a volunteer student staff.



The control and administration of all student activities are outlined in a separate bulletin called "Information and Regulations Governing Student Activities."

## SPORTS

The University is a member of the Southern Conference and the National Collegiate Athletic Association. Its teams participate in intercollegiate contests in basketball, baseball, tennis, golf, rifle, soccer, and crew.

The University maintains a complete program of intramural sports for both men and women. The men's program is conducted by the Intramural Council. The Women's Athletic Association and Intersorority Athletic Board cooperate with the Department of Physical Education, Health, and Recreation in conducting the women's intramural and informal extramural sports program in tennis, hockey, basketball, canoeing, rifle, swimming, golf, bowling, and badminton.

## PERFORMING ARTS

Students may participate in dance, drama, forensics, music, and radio broadcasting through the following organizations: Dance Production Groups I, II, III (Modern Dance) and Folk Dance, Enosinian Debating Society; Folk Music Society; Station WRGW; University Chorus, Madrigal Singers, Orchestra; and University Players. Each of these groups presents programs during the academic year.

With the cooperation of the Curator of Art, an annual student art exhibit is presented.

## ANNUAL EVENTS

*Recreation Program.*—The Student Council and the departments of Physical Education, Health, and Recreation arrange dances, movies, and trips at frequent intervals for all students.

*Concert Program.*—The Student Council sponsors a concert each semester at which nationally known entertainers perform.

*Orchestra Series.*—The University Orchestra offers a series of concerts throughout the academic year.

*Art Exhibits.*—The work of locally, nationally, and internationally known artists is shown in monthly exhibits in the Dimmock Gallery in Lisner Lounge.

*Engineers' Mixers.*—At the beginning of each semester the Engineers' Council sponsors a program of orientation, good fellowship, and entertainment to introduce new students.

*Engineers' Week.*—Sponsored by the Engineers' Council to acquaint high school students and their parents with the School of Engineering and Applied Science.

*Homecoming.*—Scheduled about the middle of the fall semester, Homecoming is the primary festive period of the school year. It includes the Annual Homecoming Musical and other activities.



*Religion in Life Program.*—Special emphasis is given to the place of religion in contemporary society in this program of events during the fall and spring semesters.

*Holiday Season.*—The University traditionally greets the holiday season with appropriate ceremonies including the lighting of the Christmas tree (given and decorated by the Students of the School of Engineering and Applied Science), the singing of Christmas music, service projects, and the observance of a special Christmas service at the University Chapel.

*Engineers' Ball.*—The Engineers' Council sponsors the Engineers' Ball, a social event for students and alumni.

*May Day.*—This is the traditional time for the award of honors in student activities. Mortar Board and Omicron Delta Kappa announce and present their new members.

## STUDENT ORGANIZATIONS

### HONOR SOCIETIES

*Sigma Xi.*—A national scientific honor society, the purpose of which is to encourage original investigation in science, pure and applied. Outstanding graduate students in the sciences are eligible for full membership, and undergraduates who have shown marked ability in research may be elected to associate membership.

*Alpha Lambda Delta.*—A national fraternity established to encourage and reward high scholarship and attainment, membership in which is limited to those freshman women who attain a scholastic average of at least 3.50.

*Delphi.*—An intersorority honorary society.

*Delta Sigma Rho-Tau Kappa Alpha.*—A national forensic society.

*Gate and Key.*—An intrafraternity honorary society.

*Mortar Board.*—A national society for senior college women, stressing leadership, scholarship, and service.

*Omicron Delta Kappa.*—A national fraternity emphasizing leadership in extracurricular activities.

*Order of Scarlet.*—A service honorary society for sophomore and junior men.

*Phi Eta Sigma.*—A national fraternity, established to encourage and reward high scholarship and attainment, membership in which is limited to those freshman men who attain a scholastic average of at least 3.50.

*Sigma Tau.*—A national engineering honorary fraternity, the purpose of which is to recognize scholarship and professional attainment.

*Tassels.*—A service honorary society for sophomore women.

*Tau Beta Pi.*—A national engineering honorary fraternity, the purpose of which is to recognize distinguished scholarship and exemplary character.

### PROFESSIONAL ORGANIZATIONS

*American Society of Civil Engineers (Student Chapter).*

*American Society of Mechanical Engineers (Student Chapter).*

*Institute of Electrical and Electronic Engineers (Student Chapter).*

*Theta Tau (Gamma Beta Chapter).*—A national professional (engineering) fraternity. Membership by invitation to outstanding students who have com-



pleted successfully at least the first year in the school of Engineering and Applied Science.

#### OTHER ORGANIZATIONS

Alpha Theta Nu (scholarship winners), Big Sisters, Cheerleaders, Chess Club, Colonial Boosters, Ice Hockey Club, Interfraternity Council, International Students' Society, Intersorority Athletic Board, Junior Panhellenic Association, Old Men, Residence Hall Councils, Senior Panhellenic Association, Station WRGW, Student Council, University Pep Band, Young Democrats Club, Young Republican Club.

#### SOCIAL FRATERNITIES

Alpha Epsilon Pi, Delta Tau Delta, Kappa Sigma, Phi Sigma Delta, Phi Sigma Kappa, Sigma Alpha Epsilon, Sigma Alpha Mu, Sigma Chi, Sigma Phi Epsilon, Sigma Nu, Tau Epsilon Phi, Tau Kappa Epsilon.

#### SOCIAL SORORITIES

Alpha Delta Pi, Alpha Epsilon Phi, Chi Omega, Delta Gamma, Delta Phi Epsilon, Delta Zeta, Kappa Alpha Theta, Kappa Delta, Kappa Kappa Gamma, Phi Sigma Sigma, Pi Beta Phi, Sigma Delta Tau, Sigma Kappa, Zeta Tau Alpha.

#### STUDENT PUBLICATIONS

*The Cherry Tree* (the annual), *The University Hatchet* (weekly newspaper), *Mecheleci* (engineers' publication), *The Potomac* (literary magazine).

#### RELIGIOUS LIFE

The University recognizes the contribution that religion makes to the life of its students and encourages them to participate in the various religious organizations of their own choice. Catholic, Jewish, and Protestant bodies sponsor these groups and form a link between the University and the religious community. The advisers of the religious organizations are available for counseling.

#### UNIVERSITY CHAPEL

Religious services in various traditions are provided regularly for the University community as announced.

#### RELIGIOUS ORGANIZATIONS

Baptist Student Union, B'nai B'rith Hillel Foundation, Christian Science Organization, Eastern Orthodox Club, Episcopal Student Association, Lutheran Student Association, Newman Club, Unitarian Universalist Club, United Christian



Fellowship, Wesley Foundation, and a Religious Council comprised of representatives of all religious organizations.

#### PRIZES

*Norman B. Ames Memorial Award.*—Established by many friends of Professor Ames and awarded annually to a graduating senior of the School of Engineering and Applied Science who is nominated by his fellow students as having made significant contributions to the students in the School of Engineering and Applied Science and to the School and University.

*Martin Mahler Prize in Materials Testing.*—A one-year membership in the American Society for Testing Materials awarded to the upper division or graduate student in engineering who submits the best reports on tests in the Materials Laboratories course with preference given to prestressed concrete tests.

*School of Engineering and Applied Science Distinguished Scholar.*—A certificate awarded annually by the Faculty of the School of Engineering and Applied Science to the senior who graduates with the highest scholastic standing. The student's name is engraved on a plaque displayed in Tompkins Hall of Engineering.

*Sigma Tau Prize.*—A medal awarded annually by Xi Chapter to the freshman in the School of Engineering and Applied Science who maintains the highest scholastic standing in the work of the entire year.

*Theta Tau Activities Plaque.*—A plaque awarded annually by Gamma Beta Chapter to the senior in the School of Engineering and Applied Science with the most outstanding record in activities for the entire period of his attendance.



## COURSES OF INSTRUCTION

THE COURSES OF INSTRUCTION in the School of Engineering and Applied Science are listed on the following pages. Courses numbered from 1 through 199 are planned for undergraduate credit, certain courses may be taken for graduate credit when arrangements are approved in advance by the instructor and the Dean; those numbered 201 and above are planned for graduate credit and may in certain instances be taken by qualified undergraduate students.

The number of semester hours credit given for the satisfactory completion of a course is indicated in parentheses after the name of the course. Thus, a year course giving three hours of credit each semester is marked (3-3), and a semester course giving three hours credit is marked (3). A semester hour consists of the completion of one fifty-minute period of class work or of one laboratory period a week for one semester.

Courses offered in other colleges, schools, and divisions of the University, are described in the catalogues of those schools. Students are referred to those catalogues for information on courses in Mathematics, Physics, Chemistry, the Humanities and Social Sciences, and other subjects of interest.

### Applied Science

#### UNDERGRADUATE

##### 7 Flight in Space (3)

Introduction to the methods of science and the continuity of development of these methods from prehistoric times to the present. Basic differences of method in the sciences and in the humanities are explored. Explanation of mechanics of space flight, rocketry, and flight on interplanetary or earth-bound missions. Prerequisite: high school algebra, geometry, and physics.

##### 9-10 Fields and Waves I-II (3-3)

General concepts of fields through development of Laplace and Maxwell's equations. Analysis of particle motion in fields, using vector calculus. Basic wave mechanics of various types of time-varying fields. Prerequisite: Mathematics 24 or 28, and Physics 30.



**29-30 Linear Networks I-II (3-3)**

Analysis of components of linear systems: electrical, mechanical, fluid, and thermal. Steady-state and transient analysis of linear systems composed of electrical and mechanical components. Solutions of network problems, using differential equations, Fourier series, Laplace transforms. Properties and characteristics of linear networks, including vibrations, degrees of freedom, resonance, energy, and power; instruments for their measurement. Network topology. Prerequisite: Applied Science 113-14.

**31 Linear Systems (3)**

Analysis of linear systems using operational methods. Topics in the study, analysis, and design of linear systems, including reactance functions,  $n$ -port networks, spectra analysis, matrices, filters, and complex variables. Introduction to active networks. Prerequisite: Applied Science 30, Engineering 18.

**32 Active Networks (3)**

Analysis of active networks, using topology, matrices, signal-flow graphs, and transfer functions. Properties of active networks, including stability, passivity, activity, reciprocity, and feedback. Topics in scattering matrices, linear vector space, state-space, and interconnection of networks. Prerequisite: Applied Science 31, Engineering 19.

**50 Information Transmission, Modulation, and Noise (3)**

Basic concepts in information theory, transmission of information, modulation systems, periodic sampling and pulse modulation, noise in transmission systems. Prerequisite or concurrent registration: Engineering 20.

**55 Control Systems (3)**

Analysis and design of linear feedback control systems. Applications of stability criteria, steady-state and transient analyses. Prerequisite: Applied Science 31, Engineering 19.

**59-60 Introductory Analytical Mechanics I-II (4-4)**

Mechanics of particles and rigid bodies; virtual work, energy, and momentum principles. Deformable body mechanics; stress and strain concepts; bending, twisting, and buckling of slender beams. Prerequisite or concurrent registration: Applied Science 113.

**62 Soil Mechanics (3)**

Analysis of lateral earth pressures, bearing capacity, foundations, and slope stability, plus design problems involving the engineering properties of soils. Prerequisite: Applied Science 70, 122.

**63 Fluid Mechanics (3)**

Basic laws of incompressible fluid flow and their application. Introduction to boundary layer theory. Prerequisite: Applied Science 60.

**64 Compressible Fluid Flow (3)**

Basic laws of compressible fluid flow, with application to nozzles, pipe flow, and fluid machinery. Introduction to thin airfoil theory. Prerequisite: Applied Science 63, 85.

**65 Dynamics of Linear Systems (3)**

Vibration of single- and multiple-degree of freedom linear systems, transient and steady-state analysis, vibration of distributed parameter systems, and solution by numerical methods. Prerequisite: Applied Science 59, 114.



**66 Advanced Dynamics (3)**

Lagrangian and Hamiltonian formulations of mechanics; central force motion, rigid body dynamics, and small oscillations. Introduction to gyro dynamics. Prerequisite: Applied Science 65.

**70 Earth Science (3)**

Formation and properties of soils and rock, climatology, hydrology, ground water and river flow, seismology. Prerequisite: Applied Science 60, 63.

**71-72 Mechanics of Deformable Solids I-II (3-3)**

Introduction to the theories of elasticity, plasticity, and viscoelasticity; with applications in solid mechanics. Prerequisite: Applied Science 60.

**85 Thermodynamics (3)**

Fundamental concepts from classical and statistical viewpoints. Basic laws and their application to simple systems. Introduction to kinetic theory, probability theory, and partition functions. Prerequisite: Applied Science 59.

**87 Heat Transfer Theory (3)**

Introduction to theoretical concepts of heat conduction, convection, and radiation; with applications. Prerequisite: Applied Science 9, 114.

**101 Materials Science (3)**

Crystallographic structure, imperfections, dislocations, thermal characteristics, diffusion, phase diagrams. Electronic structure, basic solid types, transport properties, semiconductors, dielectrics, magnetism. Prerequisite: Applied Science 60, 85, 114.

**105-6 Measurement Science I-II (3-3)**

Fundamental concepts in measurement science; standards, error, accuracy, precision, measurement, and comparability. Design of experiments. Prerequisite: senior status.

**113-14 Engineering Analysis I-II (3-3)**

Use of ordinary and partial differential equations, linear algebra, Fourier series, Laplace transformation, and complex variables in the solution of engineering problems. Prerequisite: Mathematics 24 or 28. Applied Science 113 is prerequisite to 114.

**115 Engineering Analysis III (3)**

Solution of engineering problems using sets and functions; probability models; distributions and functions; statistical concepts and methods, including hypothesis testing, correlation, and regression. Prerequisite: Mathematics 24 or 28.

**120 Electromagnetic Waves (3)**

Brief review of Maxwell's equations, Poynting's theorem, scalar and vector potentials, waves in unbounded and bounded media, waveguides and cavity resonators, transmission line theory and the Smith Chart, radiation from infinitesimal and half-wave dipoles, introduction to the theory of arrays, connection between field theory and circuit theory. Prerequisite: Applied Science 11.

**121-22 Structural Theory I-II (3-3)**

Theory of determinate and indeterminate structures using both classical and modern approaches. Prerequisite: Applied Science 60.



**130 Electrical Energy Conversion (3)**

Fundamentals of electromechanical energy conversion, concepts of efficiency and losses, development of the equations of an ideal generalized machine from both the circuit theory and field theory approach, the generalized machine as a d-c machine and various a-c machines, 3-phase machines, and electrical power systems. Prerequisite: Applied Science 30.

**198 Undergraduate Projects (1 to 3)**

Design or research projects, as arranged.

**GRADUATE****201 Automatic Control Systems I (3)**

Linear systems. Single and multiple loops. Dynamic behavior and stability analysis by Routh-Hurwitz test, root-loci, Nyquist criterion, and Bode diagrams; performance criteria and response, independent control, compensation techniques. Synthesis and approximation methods in frequency and time domains.

**202 Automatic Control Systems II (3)**

Nonlinear systems with time-variable parameters. Stability criteria, Liapunov theory, Mathieu equation. Topological methods, phase portraits, limit cycles, switching systems, optimum smoothing, and prediction methods. Synthesis of nonlinear systems.

**203 Automatic Control Systems III (3)**

Sampled-data systems. Analysis methods; stability, random signals, Z-transform, statistical analysis. Pulsed systems and networks. Adaptive and optimizing systems. Digital computer control systems. Synthesis and design of sampled-data control systems.

**211 Mathematical Methods in Applied Science I (3)**

Methods and theory of functions of complex variables and partial differential equations and their application. May be taken concurrently with Applied Science 212. Prerequisite: graduate status.

**212 Mathematical Methods in Applied Science II (3)**

Methods and theory of tensor analysis, calculus of variations, and integral equations and their application. May be taken concurrently with Applied Science 211. Prerequisite: graduate status.

**217 Analytical Mechanics (3)**

Fundamental principles, generalized coordinates, variational principles and Lagrange's equations, nonholonomic systems, Hamilton's equations, theory of small oscillations. Prerequisite or concurrent registration: Applied Science 211.

**219 Mechanics of Continua (3)**

Mechanics of elastic, plastic, and viscous solids, and of fluids; introduction to theory and formulation of basic equations. Prerequisite: graduate status.

**220 Nonlinear Mechanics (3)**

Topological and analytical methods in nonlinear mechanics, nonlinear resonance, relaxation oscillations. Prerequisite: Applied Science 217.



- 221 Theory of Elasticity I (3)**  
General theory of elasticity for finite deformation, elastic potential and energy principles, stress-strain relations for isotropic media, theory of small deformations superimposed on finite deformations, infinite small theory of elasticity, applications. Prerequisite: Applied Science 212.
- 222 Theory of Elasticity II (3)**  
Theories of plane strain and generalized plane stress, stress-strain relations for orthotropic and transversely isotropic media, strain energy function for basic crystal classes, elastic waves, thermoelasticity. Prerequisite: Applied Science 221.
- 223 Celestial Mechanics (3)**  
General equations of motion, Lagrange's planetary equations, disturbing function, Delaunay and Poincaré variables, secular inequalities, lunar theory, precession and nutation. Prerequisite: Applied Science 217.
- 230 Rheology (3)**  
Rheological behavior of fluids, plastic and viscoelastic solids; invariant equations of state; applications. Prerequisite: Applied Science 212 and 219, or 221.
- 231 Hydrodynamics (3)**  
Methods for solution of hydrodynamic problems involving incompressible inviscid fluid flow. General equations of inviscid fluid flow; fluid deformation. Prerequisite: Applied Science 211, 212, 219.
- 232 Compressible Fluid-flow Theory (3)**  
Conservation laws, flow discontinuities, exact solutions, and linearized theory. Applications of the hodograph method, unsteady flows, and self-similar solutions. Introduction to inviscid hypersonic flow. Prerequisite: Applied Science 211, 219.
- 238 Theory of Dislocations (3)**  
Physical significance and applications of dislocation, torsion, and curvature tensors; dislocations and plastic flow in crystals; continuously distributed dislocations. Prerequisite: Applied Science 212.
- 239 Theory of Solids I (3)**  
Crystalline structure, elastic properties, lattice vibrations, thermal characteristics, order-disorder transformations in alloys. Prerequisite: graduate status.
- 240 Theory of Solids II (3)**  
Electron theory of solids, cohesive energy, band theory, magnetic and dielectric properties, applications. Prerequisite: Applied Science 239.
- 242 Magnetohydrodynamics (3)**  
Study of the interaction of fluids with electromagnetic fields. Generalized Navier-Stokes and energy equations, magnetogasdynamic and magnetohydrodynamic approximations, boundary-layer theory, statistical theory of turbulence, generalized Von Karman-Howarth equation, Boltzmann transport equation. MHD generators and devices. Prerequisite: Applied Science 120 or equivalent.



**254 Selected Topics in Structural Mechanics (3)**

Nonlinear deformations of structures, boundary value problems, thermal stresses, impact problems, and limit analysis of structures. Prerequisite: Engineering 250.

**259 Nonlinear Mechanics of Continua (3)**

Development of fundamental concepts of nonlinear media and their applications. Prerequisite: Applied Science 212 and 219, or 221.

**260 Theory of Plates and Shells (3)**

Theories of finite deformations of plates, complex variable methods, Reissner's theory of bending of electropic plates, general bending theory of shells, theory of shallow shells, boundary value problems. Prerequisite: Applied Science 221.

**261 Theory of Plasticity (3)**

Introduction to mathematical theory of plasticity; tensor invariants, theory of conditions of compatibility, constitutive equations, characteristic surfaces for perfectly plastic solids; applications. Prerequisite: Applied Science 212 and 219, or 221.

**262 Theory of Structural Stability (3)**

General criteria for stability; buckling of elastic, plastic, and viscoelastic columns, beams, plates, and shells; variational and numerical methods. Prerequisite: graduate status.

**263 Field Analysis and Potential Theory (3)**

General study of the theory of potentials as used to facilitate solution of problems in electromagnetic theory, mechanics, thermodynamics, optics, and gravitation. Emphasis on mathematical methods such as: Green's functions, variational methods, principal axis transformations, and multi-dimensional Fourier transforms. Prerequisite: Applied Science 120 or equivalent, and 211.

**264 Electrodynamics (3)**

Special theory of relativity and the Lorentz Transformation; Minkowski's Four Dimensional Formulation; Maxwell's equations in four-dimensional tensor notation; relativistic Lagrangian and Hamiltonian for a particle; electromagnetic stress tensor; radiation by charges moving at relativistic velocities; Schroedinger and Dirac wave equations, including electromagnetic fields. Introduction to quantum electrodynamics. Prerequisite: Applied Science 120 or equivalent, and 211.

**266 Electromagnetic Wave Propagation (3)**

Hertz Potential; Hankel Transforms; dipole radiating over a finitely-conducting earth; pulses in dispersive media; phase and group velocity; propagation in electrically and magnetically anisotropic media such as dielectric crystals, ferrites, and the ionosphere. Variational methods applied to obstacles in waveguides. Prerequisite: Applied Science 120 or equivalent, and 211.

**267-68 Advanced Network Analysis I-II (3-3)**

Matrix algebra and topology, network theorems, correlation of time and frequency domains, network functions, Hilbert transforms, positive real functions, quadratic forms, realizability of network functions, signal-flow graphs, spectrum analysis, filter theory.



269-70 **Linear Network Synthesis I-II (3-3)**

Positive real functions, realizability conditions, synthesis of driving-point functions, synthesis of transfer functions, active network synthesis, approximation problem.

271 **Active Network Theory (3)**

Analysis of three-terminal networks, matrix representation, reciprocity, stability, passivity-activity, feedback, oscillators. Unified theory for all linear three-terminal networks, including vacuum tube and transistor circuits.

273-74 **Communication Theory I-II (3-3)**

Time-domain analysis, waveform analysis, ideal filters, signal distortion, sampling theorems, analytic signals, signal comparison. Random variables and probability distributions, random processes, ensemble average correlation and power spectra, ergodicity, linear systems with stochastic inputs, filtering and prediction of stationary time series, modulation with random processes, nonlinear devices, statistical detection of signals. Prerequisite: Applied Science 211.

275-76 **Physical Electronics I-II (3-3)**

Physical principles underlying the operation of various electronic devices using quantum mechanics and solid-state physics; study of insulators, dielectrics, semiconductors, conductors and magnetic materials; devices studied include vacuum tubes, gas tubes, transistors, tunnel diodes, photosensitive devices, parametric and maser action.

277-78 **Information Theory I-II (3-3)**

Laws and theorems of probability, statistical measure of random variables, measure of the uncertainty function and information, noiseless coding, communication channels, channel capacity. The fundamental theorems, error-correcting codes, parity-check coding, information sources, introduction to Markov chains, channels with memory, continuous channels.

280 **Classical Thermodynamics (3)**

Equilibrium states, state variables, equations of state, First and Second Laws, thermodynamic systems, thermodynamic potentials, phase changes, kinetic theory, transport phenomena. Prerequisite: graduate status.

282 **Real Gas Dynamics (3)**

Introduction to real gas effects; dissociation, ionization, and radiative heat transfer. Prerequisite: Applied Science 232.

285 **Reaction Kinetics (3)**

Theoretical aspects of kinetics of homogeneous and heterogeneous reactions in gaseous and liquid systems. Prerequisite: Applied Science 280.

295 **Statistical Thermodynamics (3)**

Distribution functions; Boltzmann, Bose, and Fermi statistics; partition functions. Relations between statistical mechanics and thermodynamics. Thermodynamics of an ideal gas and a perfect crystal. Prerequisite: Applied Science 280.

298 **Research (arr.)**

Basic research projects, as arranged.



## Engineering

### UNDERGRADUATE

#### 10 Hydraulic Engineering (3)

Hydraulic system design; including pipe networks, river and channel flow, drainage and irrigation, water supply, and sewerage. Prerequisite: Applied Science 70.

#### 11-12 Structural Design I-II (3-3)

Concepts of structural design, elastic and plastic design of metal structures, elastic design and ultimate strength design of reinforced and prestressed concrete structures, individual design problems. Prerequisite: Applied Science 122, Engineering 113.

#### 18 Engineering Electronics I (3)

Introduction to physical electronics; diode characteristics and their use in the design of diode circuits; analysis and design of transistor and vacuum tube linear amplifiers; analysis of transistor and vacuum tube characteristics and measurements of electronic device characteristics; design of linear voltage, current, and power amplifiers. Prerequisite: Applied Science 59, 113.

#### 19 Engineering Electronics II (3)

Analysis and design of class A, B, and C amplifiers; feedback, direct coupled, and stagger-tuned amplifiers; analysis and design of AM and FM modulators and demodulators; analysis and design of diode and controlled rectifier power supplies; introduction to the use of gas tubes and solid state rectifiers and switches. Prerequisite: Engineering 18.

#### 20 Engineering Electronics III (3)

Analysis and design of clipping, clamping, and gating circuits using solid state and tube components; design of multivibrator, trigger, and relaxation oscillator circuits; analysis and design of negative resistance and nonlinear oscillators; design of linear voltage and current sweep oscillators; analysis and design of wave shaping and pulse forming circuits. Prerequisite: Engineering 19.

#### 21 Applications of Computers (3)

Solution of problems on digital computers, using machine language, Fortran and data processing and numerical methods. Writing, debugging, and running programs on a digital computer.

#### 31 Thermal Power (3)

Analysis and design of system components in heat-power, gas and vapor turbine, internal combustion engine, heat pump, and nuclear power systems. Prerequisite: Applied Science 85.

#### 49 Electrical Measurement (3)

Electrical measurements, from direct current through radio frequencies; techniques; detectors; bridges; measurement of current, voltage, power, resistance, capacitance, inductance, energy, phase angle, frequency and time; dielectric and magnetic measurements; topics in high-frequency measurement including field strength, signal-to-noise ratio, impedance, attenuation. Prerequisite: Mathematics 24 or 28, and Physics 30.



**52 Introductory Instrumentation (3)**

Theory, design, and application of simple transducers; design of instrumentation of one-type systems; analysis and design of simple instrumentation. Prerequisite: Engineering 18.

**53 Instrumentation (3)**

Analysis and design of transducers and instrumentation for measurement in systems containing multiple quantities of one type or mixtures of types. Prerequisite: Engineering 52.

**54 Mechanical Measurement (3)**

Precise measurements of mass and length; mechanical and interferometric methods.

**55 Heat Measurement (3)**

Temperature scales; measurement by resistance thermometry, thermocouples, pyrometry, vapor pressure thermometry; heat transfer quantities and their measurement; calorimeters, flow calorimeters.

**56 Pressure Measurement (3)**

Experimental techniques for quantitative measurement of pressure; working gages, standards, calibration procedures; methods and apparatus for observations near atmospheric pressure, in the high pressure range, and in the vacuum range.

**86 Energy Conversion (3)**

Cycles and entropy in energy conversion; solid-state phenomena; energy forms and equations of state; thermal cycles; thermoelectric, thermionic, and fuel cell devices; MHD generators; photoelectric principles. Prerequisite: Applied Science 85.

**100 Introductory Electrical Engineering Laboratory (3)**

Experiments in the use and characteristics of instruments for measuring electrical quantities. Verification of network theorems and electronic theory. Study of electrical devices through experimentation. Prerequisite: Applied Science 9, 29.

**101 Measurement Laboratory (3)**

Design of test and test measurement of various electrical, mechanical, and heat quantities in simple and complex systems. Data treatment and reporting of results. Introduction to quality control operations. Prerequisite: Applied Science 115. Prerequisite or concurrent registration: Applied Science 105.

**102 Measurement Projects Laboratory (3)**

Individual selected measurement problems of some complexity. Prerequisite: Engineering 101. Prerequisite or concurrent registration: Applied Science 106.

**105-6 Electrical Engineering Laboratory I-II (3-3)**

Experiments and design projects involving electrical and electromechanical devices and systems. Laboratory exercises in electromagnetic wave propagation, electronics, control systems, networks, switching circuits, and energy conversion. Prerequisite: Engineering 100 and senior status.



**111 Mechanical Engineering Laboratory (3)**

Experimental analysis of mechanical, fluid, thermal, thermomechanical, and electromechanical devices. Prerequisite: senior status.

**113 Engineering Materials (3)**

Mechanical properties of engineering materials, considering design and production aspects. Selected experiments involving physical properties of engineering materials. Prerequisite: Applied Science 60.

**121 Switching Networks (3)**

Analysis and synthesis of logic circuits; switching algebra and devices; minimization techniques; number systems and binary codes. May be taken for graduate credit. Prerequisite: Engineering 18, 21.

**122 Digital Computers (3)**

Design of digital computers and computer components; logic of machine components; machine arithmetic, flow diagrams and machine language programming. May be taken for graduate credit. Prerequisite: Engineering 121.

**131-32 Mechanical Design I-II (3-3)**

Design of machine elements and systems including shafts, beams, springs, clutches, brakes, gears; machines as systems of elements. Prerequisite: senior status.

**140 Engineering Economics (3)**

Theory and practice of engineering economics. Consideration of economic factors in engineering design decisions. Prerequisite: senior status.

**141 Urban Planning (3)**

Engineering aspects of urban planning, including transportation, water supply and sewerage, public utilities, safety and convenience, and natural environment. Prerequisite: senior status.

**142 Design Projects (3)**

Selected problems of current importance to be solved by teams applying planning, analysis and synthesis, and optimization techniques. Prerequisite: senior status.

**144 Environmental Engineering (3)**

Water and waste-water collection and treatment, pollution and pollution prevention, radiation problems, and other environmental problems. Prerequisite: senior status.

**198 Engineering Research (1 to 3)**

Applied research and experimentation projects, as arranged. Prerequisite: junior or senior status.

**GRADUATE****201 Metal Structures (3)**

Structural behavior and failure of metal structures, materials, residual stresses, analysis and design of connections and members, theory of plastic collapse of structures, plastic design.



**202 Ultimate Strength of Reinforced Concrete Structures (3)**

Modes of failure of reinforced concrete structures; experimental data on failure; ultimate strength concepts for the analysis of beams, slabs, and columns.

**203 Prestressed Concrete Structures (3)**

Structural behavior and failure of prestressed concrete structures; materials; theory, analysis, and design of prestressed concrete structures and members.

**204 Geotechnics in Soil Mechanics (3)**

Dynamic geology in the formation and properties of soils; Boussinesq and Westergaard equations for stresses and deformations in soil masses; analysis of settlement; flow of water in soils; solutions of Laplace-type equations for seepage involving foundations, earth dams, and wells; theory of frost action.

**205 Theoretical Soil Mechanics (3)**

Theories of soil strength and conditions for failure, bearing capacity of footings, pile foundations, theories of lateral earth pressure, stability of slopes, soil dynamics. Prerequisite: graduate status.

**206 Foundation Engineering (3)**

Principles of soil mechanics and structural mechanics in the analysis and design of spread footings, mat and pile foundations, retaining walls, sheet piling, and water front structures. Prerequisite: graduate status.

**211 Experimental Structural Analysis (3)**

Experimental analysis of truss, rigid frame, plate, and shell structures; large- and small-deflection models, similitude. Prerequisite: Engineering 250.

**212 Concepts of Structural Design (3)**

Advanced seminar relating theoretical and experimental knowledge to the problems of function, form, mechanical behavior, failure, and analysis of structures. Prerequisite: Engineering 201, 202, or 203; and 250.

**216 Advanced Dynamics (3)**

Vibrations of lumped-parameter systems; rigid body dynamics; vibrations of distributed-parameter systems including flexible strings, membranes, beams, and plates. Prerequisite or concurrent registration: Applied Science 211.

**218 Optical Electronics (3)**

Design of optical systems. Study of the primary aberrations, quantum theory of radiation, coherence, detection of radiation; with application to electron lenses, lasers, masers, infrared and ultraviolet devices, photoconductors and photodiodes. Prerequisite: Applied Science 275 or equivalent.

**219 Nonlinear Electronics (3)**

Analysis and design of electronic components and systems operating as switching, sweeping, gating and pulse generators; study of multivibrators, negative resistance devices and amplifiers, nonlinear operation of oscillators.

**220 High-frequency Electronics (3)**

Analysis and design of electron-tube and solid state devices used for the generation and amplification of UHF and higher frequency signals.



**221 Industrial Electronics (3)**

Applications of rectifiers, thyratrons, silicon controlled rectifiers, and transistors for power control; control amplifiers, including transistor, magnetic, and dielectric amplifiers; induction and dielectric heating; timing and counting circuits; reliability and automatic checking equipment.

**222 Electronic Measurements in Medicine (3)**

Theory of measurements in biological areas, techniques for electronic measurements on biological specimens, current problems in medical metrology stressing electronic systems.

**223 Instrumentation in Medical Electronics (3)**

Engineering in the medical laboratory, medical use of the computer, engineering techniques in patient treatment, principles of good medical instrumentation.

**230 Science of Materials (3)**

Structure as related to physical properties. Strengthening mechanisms in solids. Experimental procedures in X-ray diffraction, microradiography, and transmission electron microscopy. Lecture and laboratory. Prerequisite: graduate status.

**232 Computing Systems (3)**

General and special purpose digital computers, analog-to-digital and digital-to-analog conversion, interface problems, reliability and redundancy, real-time and time-sharing systems, digital transmission. Prerequisite: Engineering 122 or equivalent.

**233 Microwaves and Components (3)**

Electromagnetic waves in guided systems, high-frequency transmission lines, impedance matching techniques, wave guides, ferrite isolators and Faraday rotation, directional couplers, cavities and microwave components.

**234 Antennas (3)**

General solution of Maxwell's equations in terms of current sources, the far field approximations, radiation from current distributions, field equivalence theorems, the geometrical optics approximation, aperture antennas, receiving antennas, the theory of arrays, and applications to specific antennas and antenna types. Prerequisite: Applied Science 120 or equivalent.

**235 Communication Systems (3)**

Characteristics of signals and transmission channels, frequency and time multiplexing, telemetry, comparison of systems for optimum performance, communication links, aspects of space communications.

**236 Microwave Communication Systems (3)**

Analysis and design of ultra-high-frequency systems, transmitters and receivers, television, radar systems, navigational aids.

**243 Space Communication Systems (3)**

Theoretical and application aspects of space communications, as related to communication satellite systems, scientific satellites, manned space missions, and deep space missions.

**244 Spacecraft Systems Design (3)**

Space environment; structure, propulsion, control, and instrumentation of



spacecraft: launch, orbit, transit, and re-entry problems; bioastronautic considerations.

### 250 Analysis of Structures (3)

Classical and modern methods of analysis of statically indeterminate structures, including matrix analysis, variational methods, theory of plastic collapse. Prerequisite: Applied Science 211, 212.

### 252 Structural Dynamics (3)

Analysis of elastic structures under various dynamic loadings, both steady-state and transient; including vibrations of rigid frames, plates, and thin shells. Prerequisite: Engineering 250.

### 255 Analysis of Plate Structures (3)

Bending and stretching of thin elastic plates under lateral and in plane loading with various boundary conditions, continuous plates and plates on elastic foundations, buckling of plates, theory of folded plate structure. Prerequisite: Applied Science 211, 212.

### 256 Analysis of Shell Structures (3)

Theory of curved surfaces; general membrane theory, bending theory for shells of revolution; applications to specific shapes and loadings, pressure vessels, domes; buckling of shells. Prerequisite: Engineering 255.

### 260 Systems Engineering I (3)

Concept of system structure and organization. Linear and nonlinear systems analysis, simulation and modeling; statistical and gaming methods in systems analysis. Introduction to optimization methods and flow graph theorems.

### 261 Systems Engineering II (3)

Design of systems, subsystems, and components. Dynamics and stability of systems; adaptive systems; system logic, tolerances, variations, and disturbances; signals and noise; system optimization. Prerequisite: Engineering 260.

### 270 Advanced General Metrology (3)

Topics in the conceptual, physical, and mathematical aspects of measurement, standards, design for precision measurement, and measurement at extreme values.

### 271-72 Probability and Statistics of Metrology I-II (3-3)

Probability distributions, discrete and continuous distributions; sampling; combinatorial analysis; stochastic processes; conditional probability; correlation; analysis of variance; design and analysis of experiments, Latin Square experiments, factorial experiments, block and lattice design.

### 273 Precise Microwave Measurements (3)

Precise measurement of power, frequency, impedance, wavelength, and attenuation at microwave frequencies; characteristics and Q of resonant devices; calibration of microwave components; design of microwave experiments.

### 274 Precise Optical Measurements (3)

Optical constants of lens systems; aberration; resolving power; illumination in focal plane; image evaluation, magnification, index of refraction; color and color temperature.



**275 Precise Electrical Standards (3)**

Concepts of standards, errors; design of resistance, capacitance and inductance standards; DC voltage standards; frequency and time standards; dielectric and magnetic materials, attenuation standards, power standards, transfer standards.

**284 Combustion Processes (3)**

Thermodynamics of combustion, chemical kinetics, flame propagation, combustion of liquids and solids, detonation processes. Prerequisite: Applied Science 280.

**286 Laminar Viscous Flow (3)**

The Navier-Stokes equations; asymptotic solutions to flow at low and high Reynolds numbers. Solution to boundary layer equations. Study of viscous shock structure. Prerequisite: Applied Science 231 or 232.

**287 Finite Automata (3)**

Effectively computable functions and Turing machines, reliability of automata, finite state machine analysis and synthesis, strongly connected machines, artificial intelligence. Prerequisite: Engineering 121 or equivalent.

**288 Advanced Digital Computer Programming (3)**

Machine language programming, relative addressing, compilers, Bakus notations, Polish string notations. Prerequisite: Engineering 21 or equivalent.

**289 Analog Computers (3)**

Solutions of linear and nonlinear differential equations, analog computer components, model simulation, hybrid systems, servomechanism synthesis.

**291-92 Energy Conversion I-II (3-3)**

Thermodynamics of energy conversion, duality of matter, semiconductor theory, thermoelectric engines, thermionic converters; magnetohydrodynamic engines, junction diodes, photovoltaic effects, solar cells, free energy fuel cells, conditions of equilibrium, construction of fuel cells. Prerequisite: Applied Science 280.

**293-94 Heat Transfer I-II (3-3)**

Physical and mathematical concepts of heat transfer phenomena in conduction and convection under steady and unsteady state conditions including dimensional analysis, turbulence and boundary layer theory for convection; physical and mathematical concepts of heat transfer by radiation, configuration factors, network method and solution by determinants. Prerequisite: Applied Science 280.

**298 Research (arr.)**

Research as arranged.

**299-300 Thesis (3-3)**



## Engineering Administration

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### GRADUATE

#### 204 Administration of Engineering Contracts (3)

Study of the total contracting process: including initial budget preparation and justification, actions leading to the execution of a contract, and administration of the contract to completion; considered from the viewpoints of the industrial and government buyer and the seller of technical materials and services.

#### 207 Personnel Administration (3)

Study of the functions of managing personnel, with emphasis on relationships within organizations which utilize the services of engineers and scientists; employment, management, development, wages and classification, union relations, safety, health and collateral benefits and services, human relations, personnel research in the field.

#### 210 Engineering Law (3)

Legal principles and procedures of interest to engineers, the American Legal System, contracts and specifications, liability of professional engineers, antitrust problems, agency relationships, negotiable instruments, patent and proprietary rights, special problems in research and developmental contracts.

#### 211-12 Engineering Administration I-II (3-3)

Comprehensive and systematic study of the administrative process with emphasis on industrial, scientific, and engineering environments. Planning: objectives, prediction, policies, plans and characteristics of plans. Organizing: theory of organization, structure, authority, specialization, delegation, staff and committees. Directing: leadership, managing human and material resources. Controlling: setting standards, evaluating performance, using system feedback data for correction and improvement.

#### 253 Production Management (3)

Planning, organizing, and control of production; forecasting techniques; material management; methods of loading and scheduling production processes; electronic methods in production control. Organization and administration of the plant engineering function with emphasis on maintenance control programs.

#### 254 Automatic Data Processing Systems (3)

Logic of computers, arithmetic and control units, systems analysis for data processing applications, systems design, systems economics, relation to scientific decision processes.

#### 255 Administration of Research and Development (3)

Study of contemporary practices of administrators of scientific and engineering research and development for the purpose of finding uniformities, characteristics, and conceptual schemes; relation of such findings to accepted managerial concepts, and projection of their implications on contemporary managerial hierarchies and organizational structures.



**261 Economic Analysis in Engineering Planning (3)**

Important concepts and theories employed in economic analysis of engineering projects. Application of various analytical processes. Detailed practice in pursuit of solutions to, and adjustment of, persistent and current problems in this field.

**269-70 Operations Research I-II (3-3)**

Basic concepts and techniques of operations research as applied to problems in industrial, governmental, and military decision making. History and orientation of operations research; concept of quantitative decision making; decisions under certainty, risk and uncertainty; utility; allocation models. Game theory; queuing theory; inventory, sequencing, and replacement models; Monte Carlo, simulation, and gaming. Prerequisite: Applied Science 115 or equivalent.

**272 Problems in Operations Research (3)**

Field experience in operations research on a team basis. Each small group locates an actual problem and formulates solution by operations research models. Class evaluation of progress.

**273 Mathematical Models for Operations Research (3)**

Mathematical models used in the operations research areas of mathematical programming; game, queuing, and inventory theory. Matrices and linear vector spaces, differential-difference equations, integral transforms, mathematical probability, stochastic processes.

**275 Linear Programming (3)**

The basic computational, theoretical, and applied areas with emphasis on the general linear programming problems; simplex procedures; duality problems; parametric linear programming and sensitivity analysis, transportation problem.

**276 Theory of Games (3)**

Study of mathematical models with applications to the relationships among independent competitive entities (persons or organizations in environment of competition, bargaining, bidding), selection of optimum strategies, min-max concept, connections with linear programming and decision functions, two-person and n-person zero and nonzero sum games.

**277 Queuing Theory (3)**

Study and analysis of waiting line systems, birth and death processes, arrival and service patterns, single and multi-channel systems, variations in queuing disciplines.

**278 Nonlinear and Dynamic Programming (3)**

Static and dynamic optimization problems including: convex, quadratic, and separable programs; network problems; problems in the calculus of variation. Gradient, Lagrangian, and penalty functions techniques.

**279 Inventory Control (3)**

Application of mathematical techniques to decisions regarding when and how much to produce or purchase, control of production and inventory systems, various mathematical models of inventory systems with deterministic and stochastic demands, forecasting demand, interaction of production and inventory systems, simulation models.



**281-82 Systems Analysis and Management I-II (3-3)**

Systems analysis as applied to management. Properties, nature, structure, and organization of systems; conceptualization of total system. Operational functioning and description of systems. Boundary and feedback concepts. Objectives of systems analysis, concept of planning, problem definition, choosing objectives for analysis. Relationship with other fields. Systems analysis as a methodology for exploring alternatives, assumptions, criteria, and risk. Decision making, measurement, and value theory in systems analysis.

**285 Seminar in Administrative Problems (3)**

Individual analysis of complex administrative problems, with group evaluation and discussion. Prerequisite: degree candidacy and 18 semester hours graduate credit.

**298 Research (arr.)**

Basic or applied research in engineering administration.



## ALUMNI ASSOCIATIONS

### THE GENERAL ALUMNI ASSOCIATION

THE OBJECTIVES OF THIS ASSOCIATION are to unite the graduates who wish to associate themselves for charitable, educational, literary, and scientific purposes, and to promote the general welfare of the University.

Eligible members are those who have matriculated in any school of the University and who have left the University in good standing, or any person who is or has been a member of the teaching, research, or administrative staff of the University, or of the Board of Trustees of the University. Active members are those eligible members who are current contributors (dues or otherwise) to or life members of The George Washington University General Alumni Association, the Alumni Association of any school of the University, or contributors to the Annual Support Program.

The Alumni Office is in Bacon Hall, 2000 H Street, N.W., Washington, D. C. 20006.

All alumni are urged to keep the Alumni Office informed of changes of address or occupation and to supply information with regard to their fellow alumni.

### THE ENGINEER ALUMNI ASSOCIATION OF THE GEORGE WASHINGTON UNIVERSITY, INC.

The Engineer Alumni Association was organized in 1936 and was incorporated in 1962. It has worked closely with the General Alumni Association since its organization. Its objects are to unite the graduates and Faculty of the School of Engineering and Applied Science in closer fellowship, to promote the general welfare of the School of Engineering and Applied Science and of the University at large, to foster activities of the engineering organizations recognized by the University, and to advance the profession of engineering in general.



## THE UNIVERSITY

### HISTORY AND ORGANIZATION

THE GEORGE WASHINGTON UNIVERSITY had its beginning in 1821 as The Columbian College in the District of Columbia. The name of the institution was changed in 1873 to Columbian University and in 1904 to The George Washington University. The debt of the University to George Washington whose name it bears is an intangible one.

George Washington, as President and as private citizen, had urgently insisted upon the establishment of a National University in the Federal City. There he hoped that, while being instructed in the arts and sciences, students from all parts of the country would acquire the habits of good citizenship, throwing off local prejudices and gaining at first hand a knowledge of the practice, as well as the theory, of republican government. To further the materialization of his hopes, Washington left a bequest of fifty shares of The Potomac Company "towards the endowment of a University to be established within the limits of the District of Columbia, under the auspices of the General Government, if that government should incline to extend a fostering hand towards it." The Congress never extended "a fostering hand." The Potomac Company passed out of existence, and Washington's bequest became worthless.

Fully conscious of Washington's hopes, but motivated primarily by a great missionary urge and the need for a learned clergy, a group of dedicated ministers and laymen sponsored a movement for the establishment of a college in the District of Columbia. Inspired largely by the zeal and energy of the Reverend Luther Rice, they raised funds for the purchase of a site and petitioned Congress for a charter. After much delay and amendment, Congress granted a charter which was approved by President Monroe on February 9, 1821. To safeguard the College's nonsectarian character it provided "That persons of every religious denomination shall be capable of being elected Trustees; nor shall any person, either as President, Professor, Tutor or pupil, be refused admittance into said College, or denied any of the privileges, immunities, or advantages therefore, for or on account of his sentiments in matters of religion."

During the entire time when the institution was known as Columbian College, its activities were centered on College Hill, a tract of forty-six and a half acres between the present Fourteenth and Fifteenth Streets extending north from Florida Avenue to somewhat beyond Columbia Road. The Medical School



was located downtown. For the better part of the Columbian University period, the buildings of the University were situated along H Street between Thirteenth and Fifteenth Streets. The Medical School group still remains there.

During the last half century the University's present plant has been developed in that section of the old First Ward familiarly known as "Foggy Bottom," between Nineteenth and Twenty-fourth Streets, south of Pennsylvania Avenue. Within a few squares are the White House, the Department of the Interior, the State Department, the World Bank, and many other government offices and international agencies. The area is not without its reminders of historic interest to the University. President Monroe, who signed the Charter, lived at 2017 Eye Street. The first President of the Board of Trustees, the Reverend Obadiah B. Brown, was for fifty years the pastor of a church at Nineteenth and Eye Streets, and Washington selected Twenty-third and E Streets as the site of the National University he had hoped to see established.

The University as it is now organized consists of Columbian College of Arts and Sciences (undergraduate); the Graduate School of Arts and Sciences; the professional schools, which include the National Law Center and the schools of Medicine, Engineering and Applied Science, Education, Government and Business Administration, and Public and International Affairs; the College of General Studies; the Division of University Students; and the Summer Sessions.

The George Washington University is privately endowed and is governed by a self-perpetuating Board of Trustees of which the president is an ex officio member.

#### THE LIBRARY

The Library collections of the University are housed in the University Library and in the departmental libraries of law and medicine.

These collections contain approximately 435,900 volumes—329,000 in the University Library, 72,900 in the Law Library, and 34,000 in the Medical Library. Approximately 15,000 volumes a year are added to the Library's resources. Endowments, supplementing the University appropriation, provide books in the fields of American civilization, American literature, foreign service, history, public finance, and the social sciences; and gifts from many sources have enriched the collections. The Libraries currently receive 3,400 periodicals.

A student registered in the University is entitled to the reference use of the University Library. The Student Identification Card, issued upon the payment of fees, must be presented as identification.

The loan period for most books available for home circulation is two weeks, with an additional two-week renewal. A fine of five cents will be charged for each day a book is overdue. Any book which does circulate is subject to recall by the Librarian at any time. Reserve books for collateral reading must be used in the reading rooms when the Library is open. With special permission they may be drawn for overnight use when the Library closes. A fine of twenty-five cents will be charged for the first hour or fraction of an hour and five cents for each hour or fraction thereafter that a reserve book is overdue. Grades of a student will be withheld until his library record is clear.

The University Library is open from 8:30 a.m. to 10 p.m. each class day, Saturday 9 a.m. to 5 p.m., and from 2 to 10 p.m. on Sunday.



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Galip Mehmet Arkilic, Ph.D., *Chairman, Department of Engineering Mechanics*  
Nelson Thomas Grisamore, Ph.D., *Chairman, Department of Electrical Engineering*  
Herbert Ernest Smith, C.E., Ph.D., *Chairman, Department of Engineering Administration*



## THE SCHOOL OF ENGINEERING AND APPLIED SCIENCE

### Faculty and Staff of Instruction\*

---

#### EMERITI

Benjamin Carpenter Cruickshanks, *Professor Emeritus of Mechanical Engineering*

B.S. in M.E. 1920, The George Washington University

Jack Edward Walters, *Professor Emeritus of Engineering Administration*

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Don Harvey Cook, *Associate Professorial Lecturer in Applied Science*

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\* Professors, Adjunct Professors, Associate Professors, Assistant Professors, and Instructors constitute the Faculty. The President of the University, the Vice President for Academic Affairs, the Registrar of the University, and the Director of Admissions of the University are ex officio members of the Faculty. This listing of the Faculty and Staff of Instruction is for the academic year 1966-67.



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\* On leave of absence 1966-67.



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\* On leave of absence 1966-67.



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B.M.E. 1963, M.S. in Engr. 1965, The George Washington University

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B.S. in Engr. 1965, Case Institute of Technology

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SUMMER SESSIONS, Dean of the Summer Sessions

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SCHEDULE OF CLASSES: SUMMER SESSIONS, Dean of the Summer Sessions

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Jessie Bigelow Martin, A.B., *Editor of Academic Publications*



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## COLLEGES AND SCHOOLS—DEGREE PROGRAMS

COLUMBIAN COLLEGE OF ARTS AND SCIENCES: Associate in Arts (A.A.), Bachelor of Arts (A.B.), Bachelor of Science (B.S.), Bachelor of Science in Medical Technology (B.S. in Med. Tech.)

GRADUATE SCHOOL OF ARTS AND SCIENCES: Master of Arts (A.M.), Master of Fine Arts (M.F.A.), Master of Music (Mus.M.), Master of Science (M.S.), and Doctor of Philosophy (Ph.D.)

SCHOOL OF MEDICINE: Doctor of Medicine (M.D.)

NATIONAL LAW CENTER: Bachelor of Laws (LL.B.), Master of Laws (LL.M.), Master of Comparative Law (M.Comp.L.), and Doctor of Juridical Science (S.J.D.)

SCHOOL OF ENGINEERING AND APPLIED SCIENCE: Bachelor of Science (Civil Engineering) (B.S. (C.E.)), Bachelor of Science (Electrical Engineering) (B.S. (E.E.)), Bachelor of Science (Measurement Science) (B.S. (Meas.S.)), Bachelor of Science (Mechanical Engineering) (B.S. (M.E.)), Master of Science (M.S.), Master of Engineering Administration (M.E.A.), and Doctor of Science (D.Sc.)

SCHOOL OF EDUCATION: Bachelor of Arts in Education (A.B. in Ed.), Bachelor of Science in Physical Education (B.S. in P.E.), Master of Arts in Teaching (A.M. in T.), Master of Arts in Education (A.M. in Ed.), Education Specialist (Ed.S.), and Doctor of Education (Ed.D.)

SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION: Bachelor of Business Administration (B.B.A.), Bachelor of Science in General Studies (B.S. in Gen.Std.), Master of Arts in Government (A.M. in Govt.), Master of Business Administration (M.B.A.), Master of Public Administration (M.P.A.), Master of Science in Business Administration (M.S. in B.A.), Master of Science in Financial Management (M.S. in Fin.Mgt.), Master of Science in Governmental Administration (M.S. in Govt.Adm.), Master of Science in Personnel Administration (M.S. in Per.Adm.), Master of Science in Public Administration (M.S. in P.A.), Graduate Certificate in Health Care Administration (Grad.Cert. in H.C.A.), Doctor of Business Administration (D.B.A.), and Doctor of Public Administration (D.P.A.)

SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS: Bachelor of Arts (A.B.), Certificate of the Institute for Sino-Soviet Studies (Cert. of I.S.S.S.), Master of Arts (A.M.), and Master of Science in International Affairs (M.S. in I.A.)

COLLEGE OF GENERAL STUDIES: Bachelor of Science in General Studies (B.S. in Gen. Std.) and Bachelor of Science in Geodetic and Cartographic Science (B.S. in Geod. and Cart.Sc.)



## THE GEORGE WASHINGTON UNIVERSITY

COLUMBIAN COLLEGE OF ARTS AND SCIENCES, 1821

THE GRADUATE SCHOOL OF ARTS AND SCIENCES, 1893

THE SCHOOL OF MEDICINE, 1825

THE NATIONAL LAW CENTER, 1865

THE SCHOOL OF ENGINEERING AND APPLIED SCIENCE, 1884

THE SCHOOL OF EDUCATION, 1907

THE SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION, 1928

THE SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS, 1928

THE COLLEGE OF GENERAL STUDIES, 1950

THE DIVISION OF UNIVERSITY STUDENTS, 1930

THE SUMMER SESSIONS, 1916

THE UNIVERSITY HOSPITAL, 1898



THE GEORGE WASHINGTON UNIVERSITY BULLETIN



COLLEGE  
OF  
GENERAL STUDIES

1967-1968



## CORRESPONDENCE DIRECTORY

Detailed information may be obtained by addressing inquiries as indicated below. For any information not included here, please write to the Office of Admissions. Mailing address for all University offices unless otherwise indicated is The George Washington University, Washington, D. C. 20006.

Information concerning courses of instruction, programs, and faculties of the several colleges and schools will be found in separate issues of the University Bulletin, which are listed on page 131. Zip code is essential for mailing catalogues.

Admission.....	Office of Admissions
Law (LL.B. degree).....	Dean of The National Law Center
School of Medicine.....	1331 H Street, Washington, D. C. 20005
Alumni Association.....	Alumni Office
Medical Alumni Association.....	1331 H Street, Washington, D. C. 20005
Financial Aid.....	Student Financial Aid Office
Foreign Students.....	Adviser to International Students
Gifts and Bequests.....	Resources Programs

## Graduate Study

In Arts and Sciences.....	Dean of The Graduate School of Arts and Sciences
In Education.....	Dean of The School of Education
In Engineering and Applied Science.....	Dean of The School of Engineering and Applied Science
In Law.....	Dean of The National Law Center
In Accounting, Business Administration, Business and Economic Statistics, Health Care Administration, International Business, Personnel Administration, Public Administration, Urban and Regional Planning	Dean of The School of Government and Business Administration
In International Affairs and Public Affairs.....	Dean of The School of Public and International Affairs

## Housing

Housing	Dean of Men
Men.....	
Women.....	Dean of Women
Off-Campus and Noncredit Courses.....	Dean of The College of General Studies
Student Employment.....	Student Placement Office
Summer Sessions.....	Dean of The Summer Sessions
Transcripts of Records.....	Registrar
Veterans Education.....	Director of Veterans Education

THE GEORGE WASHINGTON UNIVERSITY BULLETIN  
Volume LXVI, Number 11, July 1967

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MONTHLY: SEPTEMBER, OCTOBER, FEBRUARY  
(2 ISSUES IN JULY, DECEMBER, MARCH, AND APRIL)

*Second Class Postage Paid at Washington, D. C.*



# THE GEORGE WASHINGTON UNIVERSITY BULLETIN

## COLLEGE OF GENERAL STUDIES

CALENDAR 1967-68

SEPTEMBER

OCTOBER

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1967 FALL SEMESTER

## THE COLLEGE OF GENERAL STUDIES—1967-68

WASHINGTON, D.C. 20006



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SEPTEMBER

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## COLLEGE OF GENERAL STUDIES CALENDAR 1967-68\*

### 1967 FALL SEMESTER

- August 14-September 13* Off-campus registration† (days of registration and beginning classes will be announced in *Off-Campus Schedule of Classes*)  
Application for February graduation due as part of registration
- ‡September 12-13* Registration on campus‡ *Tuesday-Wednesday*  
Application for February graduation due as part of registration
- September 14* Classes begin off campus and on campus *Thursday*
- September 29* Subjects of Master's theses of February candidates due in Dean's Office *Friday*
- September 30* CGS meeting of Staff of Instruction, 10:30 am, Lisner Auditorium *Saturday*
- November 10* Veterans Day (holiday) *Friday*
- November 22* Thanksgiving recess begins after last class *Wednesday*
- November 27* Classes resume *Monday*
- December 15-16* Master's comprehensive examinations *Friday-Saturday*
- December 16* Christmas recess begins after last class *Saturday*
- January 3* Classes resume *Wednesday*
- January 3* Master's theses of February candidates due in Dean's Office *Wednesday*
- January 10* Last day of campus fall-semester classes *Wednesday*
- January 17-27* Off-campus registration† (days of registration and beginning classes will be announced in *Off-Campus Schedule of Classes*)  
Application for June graduation due as part of registration
- §January 19* Last day of off-campus fall-semester classes *Friday*

\* Off-campus courses organized at any time.

† Application for graduation and for Master's Comprehensive Examinations is the student's responsibility and must be made when registering for last courses required for degree.

‡ Hours of registration will be announced in the *Campus Schedule of Classes*.

§ The final examination will be given at last class meeting.



## 1968 SPRING SEMESTER

- \*January 25-27 Registration on campus† Thursday-Saturday  
Application for June Graduation due as part of registration
- January 29 Classes begin off campus and on campus Monday
- February 2 Subjects of Master's theses of June candidates due in Dean's Office Friday
- February 3 CGS meeting of Staff of Instruction, 10:30 am, Lisner Auditorium Saturday
- February 22 Winter Convocation (holiday) Thursday
- April 6 Spring recess begins after last class Saturday
- April 16 Classes resume Tuesday
- April 26 Master's theses of June candidates due in Dean's Office Friday
- May 15 Last day of campus spring-semester classes Wednesday
- ‡May 23 Last day of off-campus spring-semester classes Thursday
- May 30 Memorial Day (holiday) Thursday
- June 2 Baccalaureate Service Sunday
- June 2 Commencement Sunday

\* Hours of registration will be announced in the *Campus Schedule of Classes*.

† Application for graduation and for Master's Comprehensive Examinations is the student's responsibility and must be made when registering for last courses required for degree.

‡ The final examination will be given at last class meeting.



## THE COLLEGE OF GENERAL STUDIES

THE COLLEGE OF GENERAL STUDIES was established in 1950 as the off-campus college of the University, to extend the educational facilities of the University, introduce experimental programs of study for mature students, and provide educational services other than formal programs of study. The College works closely with education directors; school officials; personnel administrators in government, business, and industry; and others interested in developing in-service training. The College also conducts conferences, seminars, and non-credit courses.

### ACADEMIC STANDARDS

The Staff of Instruction includes many members of the faculties of other colleges and schools of the University.

The academic standards of the University are maintained in off-campus credit courses.

The College is accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools.

The College of General Studies is a member of the Association of University Evening Colleges and the National University Extension Association.

### TYPES OF PROGRAMS

The College of General Studies administers the off-campus degree programs of the Columbian College of Arts and Sciences, the School of Government and Business Administration, and the School of Public and International Affairs.

The College also offers credit courses in liberal arts, education, and business administration for which there is sufficient demand and for which qualified instructors can be found, regardless of whether such courses are in the regular offerings of the University. Programs are offered to meet the in-service needs of special groups.

As a community service, a regular program of noncredit courses without entrance requirements is offered each semester by the College.

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Any organization, group, installation, or agency interested in having the University organize and conduct a course or a comprehensive educational program should get in touch with the Director of Credit Programs of the College of General Studies. Telephone 676-7020. A representative will be sent, upon request, to discuss organizational plans.



## **Admission**

### **ADMISSION AS A NONDEGREE STUDENT**

THERE ARE NO PREREGISTRATION FORMALITIES for the following categories of nondegree students: those who wish to enroll in off-campus courses for self-improvement; those who plan to transfer their credits to other institutions; those who have not yet applied for degree candidacy.

Nondegree students must meet the prerequisites prescribed for specific courses and, if they have previously attended a college or university, be in good standing. The nondegree student enrolling in graduate courses must have a Bachelor's degree, or 90 semester hours of undergraduate work and the permission of the instructors in the courses.

### **ADMISSION AS A DEGREE STUDENT**

For entrance requirements for Bachelor's candidacy, see page 22; for Master's candidacy, see page 32.

Application should be made only when the entrance requirements have been met and if there is a reasonable assurance that the student will be in the area long enough to complete degree requirements. Forms for application may be obtained from the College, a Field Representative, or the Installation Education Director. These should be filled out and sent to the Office of Admissions, The George Washington University, Washington, D.C. 20006, together with the credentials required, and an application fee of \$25.

### **BACHELOR'S STUDY**

The applicant must send the high school record form, available at the Office of Admissions, to his high school principal, with the request that he fill it out and return it directly to the Office of Admissions.

Eligibility for degree candidacy is dependent on

1. The adequacy of previous academic work as preparation for the course of study contemplated, including quantity and quality of work and the standing of the institution in which it was done
2. Results of specified tests, as prescribed in this catalogue or by the appropriate Committee on Admission and Advanced Standing
3. The aptitude of the student for the curriculum contemplated
4. The character of the student.

### **ADVANCED STANDING**

#### **THROUGH TRANSFER FROM OTHER COLLEGES AND UNIVERSITIES**

Properly certified courses taken at accredited colleges or universities may be applied toward a degree, subject to the curriculum requirements of the degree program for which admission is sought. Work of low passing grade (such as D or the equivalent) is not acceptable for transfer. However, a course in which



a grade of *D* was received may be used to satisfy the curriculum requirement, but may not be counted toward the total number of semester hours required for the degree.

Transfer students whose previous academic records raise doubts of their ability to complete degree requirements successfully must complete 15 hours of course work in this college with a quality-point index of 2.50 or higher to be considered for degree candidacy. Courses taken to qualify for candidacy must be distributed over two or more of the following areas: Humanities (literature, philosophy, foreign language), Social Science (anthropology, economics, geography, history, political science, sociology), and Natural Science and Mathematics. (Students who have not successfully completed an acceptable college course in English Composition must include English 1 or 1x and 2.) Applicants who have been suspended for academic reasons from this University or another institution must fulfill this same 15-hour requirement and also obtain written approval of a petition for admission to degree candidacy from the appropriate Committee on Admission and Advanced Standing.

The University reserves the right to refuse credit for transfer in whole or in part, or to allow it provisionally. Credit so given may be withdrawn for subsequent poor work.

It is the responsibility of the student to have an official transcript sent directly from each institution formerly attended to the Office of Admissions, The George Washington University, Washington, D. C. 20006.

If the transcript from a higher institution includes the record of his secondary school work, it is not necessary for the applicant to have forwarded a separate record from the principal of the secondary school.

#### THROUGH SERVICE SCHOOLS, VALIDATING EXAMINATIONS, AND CORRESPONDENCE COURSES

In addition to credit allowed in transfer from other accredited colleges or universities, a maximum of 30 semester hours of advanced standing in this College may be obtained by any combination of the following methods.

*Service Schools.*—A maximum of 30 semester hours may be obtained on the basis of service schools satisfactorily completed, as evaluated in accordance with the "Guide to the Evaluation of Educational Experience in the Armed Forces." Ordinarily such subjects are counted as electives. No credit will be allowed for military experience as such.

*Validating Examinations.*—A maximum of 12 semester hours may be obtained by validating examinations. With the approval of the departmental adviser concerned, permission to take such examinations is granted those who are qualified by work experience and background. Validating examinations may be taken only once, and a grade of *C* or better is required for credit. The fee for each 3-hour course examination is \$84.

*Correspondence Courses.*—A maximum of 15 semester hours may be earned through the successful completion of correspondence courses of college level which are offered by the U.S. Armed Forces Institute or a regionally accredited college or university.



**MASTER'S STUDY**

Application for Master's candidacy may be made before starting course work or should be made immediately after or no later than the first semester of enrollment. No more than 6 semester hours of credit toward the degree will be granted for work taken in nondegree status (before application and while the application is being processed).

**ADVANCED STANDING\***

A maximum of 6 semester hours of advanced standing may be credited toward the degree by transfer of credit for approved graduate work taken at an accredited college or university.

**Registration**

OFF-CAMPUS REGISTRATION is conducted before or at the first class meeting of each course, at times and places stated in the *Off-Campus Schedule of Classes*, available well in advance of each semester.

Registration in an off-campus course constitutes admission to that course only. It does not admit the student to campus courses or to degree candidacy. In the College of General Studies, only students admitted to degree candidacy may enroll as full-time students (for 12 semester hours or more). Those who have graduated from high school recently and wish to be *full-time freshman* students at this University should apply for admission to the appropriate college or school on campus.

**Auditing.**—With the permission of the instructor, students may register as "Auditors." An auditor is not required to take active part in the exercises or to take examinations; he receives neither grades nor credit. Tuition is the same for the auditor as for the student registered for credit. With the approval of the Dean, a student may change from credit to audit status during the first third of the semester. A student who takes a course as an auditor may not repeat it later for credit.

**Concurrent Registration.**—A student registered as a degree candidate in any other college or school of the University may take credit courses in the College of General Studies *only by permission (granted prior to registration) of the dean of the college or school concerned*. A "College of General Studies Off-Campus Registration Permit" form must be obtained at the office of the appropriate college or school, signed by the dean of that college or school, and presented at the time of registration in the College of General Studies.

Service personnel enrolled full time for campus courses need the permission of the Dean of the College of General Studies to register concurrently for off-campus courses.

\* Not applicable to candidates for the degrees of Master of Science in Business Administration, Master of Science in International Affairs, or Master of Science in Public Administration in the War Colleges' program.



Any student taking course work in another college or school of the University or taking Consortium courses must have permission of his Dean.

#### NONCREDIT COURSES

Noncredit courses are open to anyone interested in enrolling. When a course is organized at the request of a particular agency or group, admission may be restricted to the students recommended by the sponsoring organization.

### Fees and Financial Regulations

ALL FEES should be paid by check or money order, made payable to The George Washington University.

The following fees were adopted for the academic year 1967-68. (See page 10 for projected tuition increases for 1968-71.)

#### Tuition

On-Campus:	
Full-time undergraduate program (12 to 18 hours), each semester.....	\$812.50
Part-time undergraduate program or hours in excess of 18, for each semester hour .....	57.00
Graduate study, for each semester hour.....	57.00
Off-Campus:*	
For each semester hour.....	42.00
The Education Program of the Armed Forces may defray a maximum of \$14.25 a semester hour for service personnel.	
War Colleges' and ICAF programs, for each semester hour.....	48.00
Thesis:†	
War Colleges' and ICAF programs, for each semester hour.....	48.00
Off-Campus programs other than War Colleges' and ICAF, for each semester hour .....	57.00

#### Special Fees

Application fee (degree candidate), nonrefundable.....	25.00
Graduation fee, due and payable at the time of registration for the last semester or summer session.....	25.00
Fee for binding three copies of the Master's thesis.....	10.00
Withdrawal fee, charged in certain cases.....	5.00

\* Except in War Colleges' and ICAF programs.

† Payment of tuition for the thesis entitles the candidate, during the two semesters he registers for thesis (299-300), to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished, additional time (a successive academic year for students who are candidates for degrees from the School of Government and Business Administration; a calendar year for students who are candidates for degrees from the School of Public and International Affairs) may be granted without further tuition payments. The student must, however, maintain continuous registration during this period. In the event the preparation of the thesis extends beyond the additional time granted, as specified above, the student must register for the entire 6 hours of thesis again and pay tuition as for a repeated course. (See page 17 for regulations governing Military Leave.)



Reinstatement fee, for reinstatement after financial suspension.....	10.00
Continuous Registration fee, <i>off-campus degree candidates</i> , to maintain "continuous registration" during any semester of absence from the University*	42.00
Continuous Registration fee, <i>on-campus degree candidates</i> , to maintain "continuous registration" during any semester of absence from the University or after completion of tuition requirements*.....	57.00
Continuous Registration fee, <i>War Colleges' or ICAF degree candidates</i> , to maintain "continuous registration" during any semester of absence from the University* .....	48.00
Fee for each examination to waive a curriculum requirement.....	5.00
Validating Examination fee.....	84.00
Transcript fee, charged for each transcript of record.....	1.00

**PROJECTED TUITION INCREASES 1968-71**

Projected increases for the academic years 1968-69, 1969-70, and 1970-71 have been estimated as follows:

**On Campus**

Increase by year (full-time undergraduate students):

1968-69 .....	\$75.00
1969-70 .....	100.00
1970-71 .....	100.00

Increase by semester hour (graduate and part-time undergraduate students):

1968-69 .....	3.00
1969-70 .....	4.00
1970-71 .....	4.00

**Off Campus**

Increase by semester hour (except War Colleges' and ICAF programs):

<i>Course Work Other than Thesis</i> .....	\$2.00
1968-69 .....	3.00
1969-70 .....	3.00
1970-71 .....	

<i>Thesis</i> .....	3.00
1968-69 .....	4.00
1969-70 .....	4.00
1970-71 .....	

Increase by semester hour (War Colleges' and ICAF programs including thesis):

1968-69 .....	3.00
1969-70 .....	3.00
1970-71 .....	4.00

It is not possible to project future economic data with certainty. Barring unforeseen developments, however, the above listed tuition schedule will be followed.

\* Payment of the continuous registration fee entitles the student who is granted leave of absence to return and continue his work toward a degree under the academic requirements which were in force at the time of his first registration. The continuous registration fee applies toward neither tuition fee nor residence requirements for the degree. This fee does not apply to students granted Military Leave (see page 17).



## PAYMENT OF FEES

### OFF-CAMPUS COURSES

Fees for each semester are due and payable in full at the time of each registration; however, a student registering for a *fifteen-week credit course* may sign a contract at each registration to make payments in three equal installments—one-third at the time of registration, one-third 30 days after the course begins, and one-third 60 days after the course begins. Payments are due at the stipulated times even if the student has not received a payment-due reminder notice from the University.

Tuition and fees for credit courses lasting less than fifteen weeks, and for all noncredit courses, are payable in full at registration.

*Financial Suspension.*—A student who fails to meet a tuition payment when due is automatically suspended and may not attend classes until he has been officially reinstated by the Student Accounts Office and has paid all accrued fees and a \$10 reinstatement fee.

### CAMPUS COURSES

For regulations governing the payment of fees for Campus courses, see the Undergraduate and Graduate Catalogue.

## REFUND OF FEES

### OFF-CAMPUS COURSES

No fees will be refunded (except in the event of course cancellations) for any course of less than eight weeks' duration, or any noncredit course.

*Fifteen-week Credit Course.\**—In no case will the first third of the tuition cost be refunded unless the course is cancelled. Two-thirds of the total charge will be waived or refunded if the course is dropped within the first 30 days. One-third of the total cost will be waived or refunded if the course is dropped within the second 30 days. No refund will be allowed on withdrawal subsequent to the second 30-day period. In no case will tuition be reduced or refunded because of absence from classes.

This regulation does not apply if a student withdraws from one course to enter another.

### CAMPUS COURSES

For regulations governing refund of fees for Campus courses, see the Undergraduate and Graduate Catalogue.

\*If a student is transferred from the area under military orders, he will be entitled to a *credit* of at least one-third of his tuition for that semester. In case the student has paid more than one-third of his tuition, refund of tuition over the one-third credit will be governed by the regulations set forth for *Fifteen-week Credit Course*.



## Regulations

### CAMPUS STUDY

OFF-CAMPUS DEGREE CANDIDATES may register for campus courses approved for their programs, if these courses are not conveniently available at off-campus centers. Permission for on-campus registration must be obtained from the Dean of the College of General Studies at least two weeks prior to the date of campus registration.

Service personnel who wish to study full time at the University may register for campus courses through the College of General Studies if they meet the following requirements. Permission of the Dean is required for concurrent enrollment in off-campus courses.

1. The applicant must be in attendance under official orders which give him a specified time in which to finish his degree requirements.

2. He must be in a position to enroll for full-time study.

In cooperation with the Naval Medical School (and the National Naval Medical Center, Bethesda, Maryland), a program in anesthesia is conducted for officers of the Navy Nurse Corps, to help them meet the requirements for certification as registered nurse anesthetists. Selected students attend full-time campus classes, and an off-campus course in anesthesiology offered at the National Naval Medical Center.

### ACADEMIC WORK LOAD

Only students admitted to degree candidacy may enroll as full-time students, i.e. for 12 or more hours in a semester. Students taking course work to qualify for degree candidacy in this College may take not more than 10 hours in a semester.

A full-time student who is not on probation may take ordinarily not more than 17 semester hours. A student employed more than 20 hours a week, who is not on probation, may take not more than 10 hours.

A full-time student whose quality-point index is 3.50 or higher may take not more than 19 hours. An employed student who meets the same standard may take not more than 12 hours.

A student on probation normally may take not more than 3 semester hours.

A student who accepts employment after registration or at any time during a semester must report that fact immediately to the Dean so that his program may be adjusted, if necessary.

Any student taking course work in this College (whether nondegree or degree candidate) must have the permission of the Dean for concurrent registration in another college or university.

### ATTENDANCE

The student is held responsible for all of the work of the course, and all absences must be excused by the instructor before provision is made for the student to make up work missed.

In a fifteen-week course in which classes meet once a week, one unexcused absence is permitted. In a fifteen-week course in which classes meet twice a



week, two unexcused absences are permitted. In an eight-week course meeting twice a week, one unexcused absence is permitted. Minimum absences per se will not be used as the sole reason for failing a course. It is the University policy that students attend courses regularly.

Excuses must be made by written application to the instructor, or by verbal permission later confirmed in writing.

### EXAMINATION FOR WAIVING CURRICULUM REQUIREMENTS

During the first full semester of degree candidacy, a student wishing to omit a required course may, with the permission of the Dean, take a waiver examination, the passing of which relieves him of the curriculum requirement and qualifies him for registration in an advanced course. *Passing of the waiver examination does not entitle the student to credit toward a degree.* The fee for each 3-hour course examination is \$5.

### SCHOLARSHIP

#### GRADES

Grades are mailed to the student through the Office of the Registrar at the close of each semester. They are not given out by instructors or the administrative staff of the College.

*Undergraduate Grading System.*—A, excellent; B, good; C, average; D, passing; F, failing; CR indicates credit. Whenever a grade has not been assigned, the symbol I (incomplete) or the symbol W (authorized withdrawal) will be assigned. The symbol I indicates that a satisfactory explanation has been given by the instructor for the student's failure to complete the work of the course. An "incomplete" cannot be made up after the lapse of one calendar year, except by written permission of the Dean's Council. An incomplete which is not removed within one calendar year is automatically changed to an F. An incomplete cannot be removed by repeating the course.

A student may not repeat, for grade, a course in which he has received a grade of D or above, unless required to do so by the department concerned. A written statement to this effect by the appropriate departmental chairman must be submitted to the Dean.

*Quality-point Index.*—Quality points are computed from grades as follows: For each semester hour of the letter grade—A, 4 points; B, 3 points; C, 2 points; D, 1 point; F, no points.

Scholarship is computed in terms of the quality-point index. This is done by dividing the total number of quality points by the total number of semester hours for which the student has registered. Example: if a student received an A in one three-credit course, and a B in another three-credit course, he would compute his quality-point index in this way:

$$\begin{array}{rcl}
 A & = & 4 \times 3 \text{ (semester hours)} = 12 \\
 B & = & 3 \times 3 \text{ (semester hours)} = 9 \\
 \hline
 & & 6 \\
 & & 21 \div 6 = 3.5 \text{ quality-point index}
 \end{array}$$



Courses marked *W* or *I* are not considered in determining the index, except that courses marked *I* will be considered when a formal grade is recorded. An incomplete which is not removed within one calendar year is automatically changed to an *F*. Grades in courses taken at other institutions are not considered in computing the quality-point index.

*Graduate Grading System.*—Grades for graduate work are *A*, outstanding; *B*, high quality; *C*, minimum quality; *F*, failure; and *I*, incomplete. *CR* indicates credit.

An average of *B* or better is required for the Master's degree. The grade of *C* is not considered as failing but must be counterbalanced by a grade of *A* in a graduate course of equal status.

Whenever a grade has not been assigned, the symbol *I* (incomplete) or the symbol *W* (authorized withdrawal) will be recorded. The symbol *I* indicates that a satisfactory explanation has been given to the instructor for the student's failure to complete the required work of the course. An "incomplete" cannot be made up after the lapse of one calendar year except by written permission of the Dean's Council. An incomplete which is not removed within one calendar year is automatically changed to an *F*. An incomplete cannot be removed by repeating the course.

#### WARNINGS

At stated intervals during the academic year students who are doing work of *D* grade or lower in courses with departmental numbers below 100 receive "warnings." A "warning" constitutes notice to the student that he must consult his instructor and his adviser at the earliest opportunity. "Warning periods" are established during the seventh and eighth weeks of fifteen-week courses, and during the third and fourth weeks of eight-week courses.

#### PROBATION

*Undergraduate Probation.*—A student must maintain a quality-point index of at least 2.00 or be placed on probation.

A student who has attempted 12 or more semester hours of work and whose cumulative quality-point index is between 1.50 and 2.00 is placed on probation for the period in which he attempts 12 additional semester hours of work. If his quality-point index is still below 2.00 at the end of his probationary period, he is suspended. The appropriate Committee on Scholarship reserves the right to extend the period of probation even if the student has earned an average of above 2.00. A student placed on probation for a third period, whether successive or after an interval, is suspended.

*Graduate Probation.*—A student who has attempted 6 or more semester hours and whose quality-point index is between 2.50 and 3.00 is placed on probation for the period in which he attempts 12 additional semester hours of work. If his quality-point index is still below 3.00 at the end of his probationary period, he is suspended. If, after probation is removed, a student's quality-point index again falls below 3.00, he is suspended.



## SUSPENSION\*

*Undergraduate Suspension.*—A student who has attempted 12 or more semester hours of work and whose cumulative quality-point index is below 1.50 is subject to suspension; however, a student who has a quality-point index between 1.40 and 1.50 is considered by the appropriate Committee on Scholarship, which may retain him on probation or suspend him. A student who has attempted 6 or more semester hours of work and has a quality-point index of 1.00 or below is suspended.

A student who is subject to probation for the third time, whether successive or after an interval, is suspended.

A student suspended for poor scholarship cannot register for courses even as an auditor. He may apply for readmission after an interval of one calendar year. He must then submit evidence to the appropriate Committee on Scholarship that he is better qualified to pursue college work. A student suspended twice for poor scholarship will not be readmitted.

*Graduate Suspension.*—A student who has attempted 6 or more semester hours of work and whose cumulative quality-point index is below 2.50 is suspended.

## READMISSION†

A student who withdraws, is suspended, or is otherwise absent from the University for one semester or more, may re-enter and continue his work only under the rules and regulations in force at the time of his return. Forms for readmission may be obtained from the Office of Admissions of the University. Complete and official transcripts from each institution the student has attended since making his previous application must be sent to the Office of Admissions before his application for readmission can be evaluated.

## CHANGES IN PROGRAM OF STUDIES

## DROPPING A COURSE OFF CAMPUS

A course may be dropped without academic penalty during the first third of the semester. Withdrawing from a course without academic penalty after the first third of the semester requires approval of a written request, which should be addressed to the Dean of the College of General Studies.

*Procedure for dropping courses.*—An Off-Campus drop slip (obtainable from the instructor, installation education director, or the College of General Studies) must be completed; signed and dated by the instructor; and submitted, in person or by mail, to the College of General Studies.

Notifying an instructor of the intention to drop a course does not constitute an official withdrawal. Failure to follow the proper procedure will result in an automatic grade of F and, regardless of the time of discontinuance, will not relieve the student of financial responsibility for the entire course. (See "Refund of Fees" page 11.)

\* For Financial Suspension see "Payment of Fees," page 11.

† When there are curriculum changes in graduate programs, the readmitted student may be required to take additional course work in preparation for the comprehensive examinations.



## DROPPING A CAMPUS COURSE

A *Campus* drop slip (available at the Office of the Dean) must be completed; signed and dated by the instructor; and submitted, in person or by mail, to the College of General Studies.

Withdrawal between the last working day\* in October and the end of the fall semester and between the last working day\* in February and the end of the spring semester is permitted only in exceptional cases.

*All charges for courses dropped without the approval of the Dean must be met by the student. Reporting the dropping of a course to an instructor does not constitute an official withdrawal.*

## TRANSFER WITHIN THE UNIVERSITY

Transfer of residence to the College of General Studies, as a degree candidate, from another college, school, or division of the University may be made only with the approval of the deans concerned. Application for transfer should be made on the transfer form, which is available at the Office of Admissions. An insert form, obtainable at the College of General Studies, must also be completed. Upon transfer the student should consult the Dean and understand clearly the requirements he must fulfill.

A maximum of 90 semester hours is transferrable toward a Bachelor's degree; 18, toward a Master's degree. Students transferring within the University are advised to note the residence requirements of the degree sought.

## CREDIT

Credit toward a degree is given only after registration for and satisfactory completion of the required work of courses in the University, or upon the granting of advanced standing in accordance with the regulations of the College.

For transfer from credit to audit status, see page 8.

## BALANCE SHEET

On request the Registrar will issue to undergraduate degree candidates a balance sheet showing the amount of work completed and the requirements remaining to be met for the degree. A second balance sheet will be issued only in the event the student changes major or degree objectives.

## TRANSCRIPTS OF RECORD

Official transcripts of student records will be issued on request of the student or former student. A fee of one dollar is charged for each transcript. No certificate of work done will be issued for a person who does not have a clear financial record.

\* The University work week is Monday through Friday, inclusive.



## CONTINUOUS REGISTRATION

Degree candidates are expected to maintain continuous registration until *all* degree requirements are satisfied. Students who have completed course registration (including the thesis) must maintain continuous registration by paying the "continuous registration" fee (see page 10). By failing to register for one semester or more, the student breaks his registration and must be readmitted (see "Readmission," page 15). A "Readmitted Student" is required to satisfy the curriculum requirements existing at the time of his readmission. The maintaining of continuous registration normally is limited to a period of one year.

Students must be registered during the summer if they elect to take courses, are taking required examinations, are receiving guidance toward theses, or are expected to graduate at the end of the Summer Sessions.

## MILITARY LEAVE

A student called to active duty will be granted military leave for the period of active duty, upon presentation to his Dean of a copy of his orders and a petition for such leave. The maintenance of "continuance registration" is not required of the student on military leave; however, he must apply for readmission to the University prior to the semester in which he expects to return.

A degree candidate who is a member of the Armed Forces and is transferred to the Far East for service connected with the Vietnam conflict will be granted military leave for the period of that service, upon presentation to the Dean of a copy of his orders and a petition for such leave.

## GRADUATION REQUIREMENTS

To be recommended for graduation a student must have met the admission requirements of the College; completed satisfactorily the scholarship, curriculum, residence, and other requirements for the degree for which he is registered; and be free from all indebtedness to the University. Registration, either for course work or on the "continuous registration" fee basis, is required for the semester or summer session immediately preceding the awarding of the degree. For the Industrial College of the Armed Forces, Air Command and Staff College, or War Colleges programs, which are on a different academic year schedule, registration in the last semester of the academic year of the program fulfills this requirement.

*Application for Graduation.*—Application for graduation must be filed and the appropriate fee paid at the time of registration for the last semester or summer session of the senior or final year. Students completing degree requirements during the Summer Sessions will be awarded diplomas (no formal convocation) September 30, *provided* they have completed all degree requirements and have applied for graduation as a part of registration for the Summer Sessions.

*Scholarship.*—Candidates for the Bachelor's degrees must have a general quality-point index of 2.00 and a quality-point index of 2.50 in the concentration (Bachelor of Science in General Studies), or major (Bachelor of Business Administration or Bachelor of Science in Geodetic and Cartographic Science). An average of B or better is required for the Master's degree (see page 14).



*Curriculum.*—See the requirements for the degree concerned.

*Residence.*—A student is "in residence" only when registered for course work after making application for admission to degree candidacy or for the 15 semester hours undertaken to qualify for degree candidacy (see the specific residence requirements for the degree concerned).

With the permission of the Dean, a student may be granted leave of absence; such student should, however, remain technically in residence by paying the continuous registration fee for each semester he is absent. For the purpose of this regulation, the summer session is disregarded.

By special arrangement, service personnel who receive military transfers when they are within 6 hours of a degree may be permitted to complete their work elsewhere, transfer these credits to the College of General Studies, and receive a degree from this University. This procedure does not apply to Master's candidates who have been granted 6 hours of transferred credit or have not completed the required courses.

*Attendance and Conduct.*—The University reserves the right to refuse to confer a degree upon a candidate whose attendance or conduct has been unsatisfactory.

*Thesis.*—A thesis, submitted in partial satisfaction of requirements for the Master's degree, must be submitted in its final form to the Dean no later than the date specified in the calendar. Three complete copies of each thesis are required. It is the responsibility of the candidate for a graduate degree to obtain from the College of General Studies a printed copy of the regulations governing the styling and reproduction of the thesis. These regulations are rigidly enforced. (See page 33.)

Accepted theses, with accompanying drawings, become the property of the University and are deposited in the University Library, where the duplicate copies are bound and made available for circulation. Permission to publish or adapt material in them must be secured from the Dean.

## HONORS

*Dean's List.*—To be eligible for inclusion on the Dean's List, a student must be a candidate for an undergraduate degree in the College of General Studies. Course work taken while the application for admission is being processed will be computed in determining eligibility for the Dean's List. A full-time degree candidate must have a minimum quality-point index of 3.50 for the semester concerned; a part-time degree candidate must have a quality-point index of 3.50 on the last 12 semester hours of work and must have maintained continuous registration for at least one three-hour course during the period concerned. Eligibility for inclusion again will be determined on the basis of the subsequent 12 semester hours of work.

*With distinction.*—The undergraduate degrees may be conferred "with distinction," at the discretion of the Dean's Council of the College and the appropriate Committee on Scholarship of the University, if a student attains a quality-point index of 3.50 or higher on all work taken at this University. To be eligible for this honor a student must have completed at this institution at least one-half of the course work required for the degree.



*Special honors.*—Special honors may be awarded to any member of the graduating class for outstanding achievement in the student's major field of work on recommendation of the major department, under the following regulations:

1. The student must have his candidacy for special honors approved by the faculty member representing the major department or field not later than the beginning of the senior year.
2. The student must meet such other conditions as may be set at the time his candidacy is approved.
3. No student will be awarded special honors unless he has a quality-point index of at least 3.00 on all work taken at this institution.
4. To be eligible for honors a student must have completed at this institution at least one-half of the academic course work required for the degree.

#### DISHONESTY

If a student knowingly makes a false statement or conceals material information on an application for admission, registration card, or any other University document, his registration may be canceled and he will be ineligible (except by special action of the Dean's Council) for subsequent registration in any unit of the University.

Evidence of dishonesty on the part of any student will result in his suspension by the Dean upon recommendation of the Dean's Council.

A student found guilty of dishonesty will be suspended for a stated period and will be deprived of credit for all courses in which he is enrolled during the semester in which the dishonest act occurs. A disciplinary grade of "Failure—Academic Dishonesty" will be recorded for each such course, and this grade will be employed in computation of the quality-point index.

A student who is readmitted after suspension because of academic dishonesty may be required to repeat for grade all courses for which a disciplinary grade has been recorded, and both the grade earned on repetition and the disciplinary "Failure—Academic Dishonesty" grade are computed in the quality-point index.

#### THE LIBRARY

A student registered in the College of General Studies is entitled to the reference use of the University Library. A library card is issued to each student.

The loan period for most books available for home circulation is two weeks, with an additional two-week renewal. A fine of five cents will be charged for each day a book is overdue. Any book which does circulate is subject to recall by the Library at any time. Reserve books for collateral reading must be used in the reading rooms when the Library is open. With special permission they may be drawn for overnight use when the Library closes. A fine of twenty-five cents will be charged for the first hour or fraction of an hour and five cents for each hour or fraction thereafter that a reserve book is overdue. Grades of a student will be withheld until his library record is clear.

The hours of the University Library are: Monday through Friday, 8:30 a.m. to 10 p.m.; Saturday, 9 a.m. to 5 p.m.; Sunday, 2 to 10 p.m.



**RIGHT TO DISMISS STUDENTS**

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable to do so.

**RIGHT TO CHANGE RULES**

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

**Student Services****HONOR SOCIETY**

*Alpha Sigma Lambda.*—A national honor society for part-time evening college and off-campus undergraduate degree students, the purpose of which is to recognize and to encourage scholarship and leadership among undergraduate degree candidates. Membership is limited to students who have been enrolled for four semesters or terms in the College of General Studies and have completed 30 semester hours of work toward a degree with a 3.50 average. The Alpha Alpha Chapter was established at The George Washington University in 1965.

**VETERANS EDUCATION**

The personnel of the Office of the Director of Student Services act as advisers to veterans and war orphans and in a liaison capacity between the University and the Veterans Administration. This Office should be consulted concerning educational benefits before application is made to the Veterans Administration for certification. The Veterans Administration is at 2033 M Street, N.W., Washington, D. C. 20421.

**VETERANS' READJUSTMENT BENEFITS ACT (Chapter 34, Title 38, U.S. Code)**

A veteran who has served on active duty after January 31, 1955, or a person who is currently on active duty may be eligible for as much as 36 months of educational assistance under this act. Applications should be submitted to the Veterans Administration prior to registration.

**WAR ORPHANS' EDUCATIONAL ASSISTANCE ACT (Chapter 35, Title 38, U.S. Code)**

A child of a person who died of a disease or injury incurred or aggravated while on active duty in the Armed Forces, or a child of a person who has a



permanent total disability resulting from such service, or a child of a person who died as a result of such a disability may be eligible for educational assistance under this act, if certain age requirements are met. In the case of a child who has not reached the age of majority, his guardian must make application for him to the Veterans Administration.

#### VOCATIONAL REHABILITATION (Chapter 31, Title 38, U.S. Code)

Disabled veterans seeking vocational rehabilitation under these laws should apply to the Veterans Administration for approval of their training objectives at least sixty days prior to registration.

#### THE PLACEMENT OFFICE

The Placement Office, 2114 G Street, N.W., provides a continuing service for George Washington University students and alumni in the areas of career counseling, resume preparation, and specific job referrals. A library of information about specific companies is available.

For students preparing for teaching on any level, the Placement Office will help to prepare and keep for circulation to prospective employers, complete confidential credentials files which consist of personal data sheets, letters of recommendation, and transcripts.

The Placement Office is open from 9 a.m. to 5 p.m., Monday through Friday.

#### COUNSELING

Students in the College of General Studies may obtain counseling and assistance in program planning in the offices of the College or from Field Representatives at the installations and agencies at which courses are held. Appointments may be made by calling the College of General Studies: Telephone 676-7000; or through the Education Director at individual installations. University counselors are also available at all installations and agencies during announced registration periods, and at scheduled times each month.

### The Bachelor's Degrees

THE FACULTY of Columbian College of Arts and Sciences has academic jurisdiction over the degrees of Bachelor of Science in General Studies with areas of concentration in history, mathematics, political science, and psychology; and Bachelor of Science in Geodetic and Cartographic Science. The Faculty of the School of Government and Business Administration has academic jurisdiction over the degrees of Bachelor of Science in General Studies with areas of concentration in accounting and business administration and Bachelor of Business Administration. These off-campus programs are administered by the College of General Studies.



**REQUIREMENTS FOR DEGREE CANDIDACY**

Secondary school graduates applying for Bachelor's candidacy must present the combined evidence of (1) an acceptable certificate of graduation from an accredited secondary school, showing a minimum of fifteen "units"\* in a college preparatory or academic curriculum; (2) the principal's statement that the applicant is adequately prepared to undertake college work with reasonable prospect of success; (3) College Entrance Examination Board scores on the Scholastic Aptitude Test and the English Composition Achievement Test (for students out of high school several years, other appropriate tests may be prescribed).

Mature students who do not meet these requirements may be considered for degree candidacy after the satisfactory completion of at least 15 semester hours of course work with a grade average of C or better. Courses taken to qualify for candidacy must include English 1 or 1x and 2, *English Composition*, and 9 semester hours of course work in at least two of the following areas: Humanities (literature, philosophy, foreign languages), Social Science (anthropology, economics, geography, history, political science, sociology), and Natural Science and Mathematics.

The selection of qualifying courses should be made in conference with the Field Representative, and a conference concerning plans for study is required of each applicant for admission to candidacy.

**REQUIREMENTS FOR THE DEGREES****RESIDENCE**

The last 30 semester hours, including at least 12 hours in the major or area of concentration, must be completed in residence in the College of General Studies, unless special permission is granted by the Dean's Council to take work elsewhere. This requirement applies to students transferring within the University as well as to students transferring from other institutions. Summer work and the 15 hours taken in order to be considered for degree candidacy may be counted in residence, but in no case may the period of residence aggregate less than 30 weeks. For regulations governing military students who are transferred when they are within 6 semester hours of their degrees, see page 18.

*Transfers.*—Transfer students from other colleges or universities must complete satisfactorily at least 12 semester hours of the required work in their major or area of concentration in residence in the College of General Studies.

**SCHOLARSHIP**

The system of grading and computing scholarship is described in detail on pages 13–14. For regulations concerning probation, suspension, and readmission, see pages 14–15.

To remain in good standing, a student must maintain a general quality-point index of 2.00 and a quality-point index of at least 2.50 in his major or area of concentration.

\* A unit represents a year's study in a secondary school subject, including in the aggregate no less than 120 sixty-minute periods, or the equivalent, of prepared classroom work.



**BACHELOR OF SCIENCE IN GENERAL STUDIES CURRICULUM**

*Faculty Adviser:* Elzberry Waters, Jr., College of General Studies. F-30; Telephone: 676-7020

The Bachelor of Science in General Studies curriculum aims to provide the adult part-time student with the opportunity to obtain a broad education. For that reason the course work required in the first and second years is distributed among Communications (written and oral), the Humanities, Natural Science and Mathematics, and the Social Sciences. In choosing the third- and fourth-year course work required in departments related to their concentration, students should obtain counseling through the Field Representatives of the College.

Students planning to work toward Master's degrees, whether as a College of General Studies student or as a student in any other college or school of the University, are advised to plan their Bachelor's programs so that they will meet the prerequisite requirements of the school or college of their choice.

Entrance and advanced standing requirements are stated on pages 6-7, 22; residence and scholarship requirements on page 22.

**FIRST AND SECOND YEARS**

Communications	Semester Hours
English 1 or 1x, 2.....	6
English 11; Speech 111, 121.....	6
Humanities	
Humanities 1-2, 3-4 or Twelve semester hours selected from the following: Art 31-32, 71-72; English 41-42, 51-52, 71-72, 91-92; Foreign Language (2 years of one language); Philosophy 51-52; Religion 9, 10, 59-60; Slavic 91-92 or 93-94.....	12
Natural Science and Mathematics	
Biological Sciences 1-2; Chemistry 3-4; Geology 1-2, 3-4; Physics 1-2.....	6-8
Six semester hours selected from the following: Mathematics 3, 6, 9, 10, 15, 16; Statistics 51, 52, 101-2 (students with a concentration in Accounting or Business Administration may elect Business Administration 118 and 119 or 120 .....	6
Social Sciences	
One full-year course in any two departments selected from the following: Anthropology 1-2; Economics 1-2; Geography 51 and 52; History 39-40, 71-72; Political Science 5-6; Psychology 1 and 8, 1 and 22, 1 and 29; Sociology 1-2 .....	12
Elective (depending on science option).....	10-12
	<hr/> 60

**THIRD AND FOURTH YEARS**

Concentrations are offered in Accounting, Business Administration, History, Mathematics, Political Science, and Psychology.

Concentration requirements (to be selected in consultation with the Field Representative or the faculty adviser):



	Semester Hours
100-level courses in the department of the selected area of concentration.....	24
100-level courses in two or more related departments.....	18
Elective .....	18
Total .....	120

### BACHELOR OF BUSINESS ADMINISTRATION CURRICULUM

*Faculty Adviser:* Robert Frank Hartley, Assistant Professor of Business Administration. Government 308; Telephone: 676-6069.

Entrance and advanced standing requirements are stated on pages 6-7, 22; residence and scholarship requirements on page 22.

	Semester Hours
<i>Required—First and Second Years*</i>	
Acct 1-2: Introductory Accounting .....	6
Anth 1: Introductory Anthropology or	
Psyc 8: Psychology of Motivation and Personality or	3
Soc 1: Introductory Sociology .....	3
B Ad 51: Introduction to Business .....	6
Econ 1-2: Principles of Economics .....	6
Engl 1 or 1x, 2: English Composition.....	6
†Lang or Lit: To be selected from the following.....	
Chin 3-4: Second-year Chinese	
Engl 51-52: Introduction to English Literature	
Engl 71-72: Introduction to American Literature	
Engl 91-92: Introduction to European Literature	
Fren 3-4: Second-year French	
Fren 51-52: Survey of French Literature and Civilization	
Germ 3-4: Second-year German	
Germ 51-52: Introduction to German Literature	
Ital 3-4: Second-year Italian	
Slav 3-4: Second-year Russian	
Slav 91-92: Introduction to Russian Literature	
Slav 93-94: Introduction to Slavic (non-Russian) Literature	
Span 3-4: Second-year Spanish	
Span 51-52: Survey of Spanish Literature and Civilization	6
Math 15, 16: Finite Mathematics I, II.....	6
P Sc 5-6: Introduction to Political Science.....	3
Psyc 1: General Psychology .....	6-8
Sciences: To be selected from the following.....	
B Sc 1-2: Introductory Biology	
Chem 3-4: Fundamentals of Physical Science	
Chem 11-12: General Chemistry	
Geol 1-2: Introductory Geology	
Phys 1, 2: General Physics	
Stat 51: Introduction to Business and Economic Statistics or	3
Stat 101: Basic Principles of Statistical Methods.....	4-6
Elective: Speech is recommended, students interested in International Business include Geography 52.....	60
Total.....	

\* This curriculum is required for majors in Business Administration and International Business.  
† This requirement is waived for students who offer 4 years of acceptable high school work in a single foreign language.



## Business Administration

<i>Required—Third and Fourth Years</i>		Semester Hours
Acct 193: Business Budgeting.....		3
B Ad 102: Fundamentals of Management.....		3
B Ad 105: Personnel Management .....		3
B Ad 131: Business Finance.....		3
B Ad 141: Basic Marketing Management.....		3
B Ad 161: Commercial Law: Contracts, Sales, Agency, and Bailments		3
B Ad 162: Commercial Law: Negotiable Instruments, Property, Mortgages .....		3
B Ad 191: Business Reports and Analyses.....		3
B Ad 198: Case Problems in Management.....		3
Econ 121: Money and Banking.....		3
Group Option: Selected from one of the following groups.....		15
Elective: Selected in consultation with the adviser.....		15
Total.....		60

## Group Options

Eight areas of specialization are open to Business Administration majors. The 15 hours taken in each of these options require the approval of the adviser. The group option and the individual courses within the option should be selected *no later than the beginning of the second semester of the junior year.*

## GROUP I: PERSONNEL MANAGEMENT

The following courses provide the basic academic foundation for such positions as personnel manager, employee relations manager, and employment manager in business and government service.

- B Ad 106: Problems in Personnel Management
- B Ad 107: Collective Bargaining
- B Ad 118: Introduction to Data Processing
- B Ad 181: Manufacturing Production
- B Ad 193: Management Communication
- B Ad 195: Controllershship
- Jour 145: Principles and Problems of Public Relations
- Psyc 129: Motivational Factors in Personality
- Psyc 131: Psychological Tests
- Psyc 144: Personnel and Industrial Psychology
- Sp&D 121: Group Discussion and Conference Leadership

## GROUP II: FINANCE

The following courses provide the basic academic foundation for such positions as credit analyst, supervisor in a financial institution, bond cashier, trust officer, bank examiner, and similar positions in federal or international financial institutions.

- Acct 111: Financial Statement Analysis
- Acct 121-22: Intermediate Accounting
- B Ad 113: Real Estate



- B Ad 118: Introduction to Data Processing
- B Ad 121: Fundamentals of Insurance
- B Ad 136: Credit Management
- B Ad 138: Investments
- B Ad 163: Law in Relation to the Form of Business Units:  
Corporations, Partnerships, and Trusts
- B Ad 181: Manufacturing Production
- Econ 101: Intermediate Microeconomic Theory
- Econ 105: Business Fluctuations and Forecasting

#### GROUP III: MARKETING

The following courses provide the basic academic foundation for such positions as sales manager, circulation manager, route superintendent, product development manager, buyer, promotion manager, and purchasing agent.

- B Ad 118: Introduction to Data Processing
- B Ad 136: Credit Management
- B Ad 143: Marketing Research
- B Ad 145: Sales Management
- B Ad 147: Advertising
- B Ad 158: Physical Distribution Management
- B Ad 171: Principles of Transportation
- B Ad 175: Introduction to Foreign Trade
- B Ad 176: International Business Theory and Policy
- B Ad 178: Management of International Business Operations
- B Ad 181: Manufacturing Production
- B Ad 195: Controllershship
- Econ 101: Intermediate Microeconomic Theory
- Econ 105: Business Fluctuations and Forecasting
- Jour 145: Principles and Problems of Public Relations
- Stat 111-12: Business and Economic Statistics I-II

#### GROUP IV: CONTROLLERSHIP

The following courses provide the basic academic foundation for the position of controller in business and government service.

- Acct 101: Cost Accounting
- Acct 111: Financial Statement Analysis
- Acct 121-22: Intermediate Accounting
- Acct 181: Accounting Systems
- Acct 191: Advanced Accounting
- B Ad 109: Office Management
- B Ad 113: Real Estate
- B Ad 118: Introduction to Data Processing
- B Ad 119: Data Processing Programming
- B Ad 121: Fundamentals of Insurance
- B Ad 163: Law in Relation to the Form of Business Units:  
Corporations, Partnerships, and Trusts
- B Ad 171: Principles of Transportation
- B Ad 195: Controllershship
- Econ 105: Business Fluctuations and Forecasting
- Econ 165: Government and Business
- Stat 111-12: Business and Economic Statistics I-II



## GROUP V: ECONOMICS

The following courses provide the basic academic foundation for such positions as financial economic analyst, industrial economic analyst, and market research analyst in business and government.

- B Ad 107: Collective Bargaining
- B Ad 118: Introduction to Data Processing
- B Ad 171: Principles of Transportation
- B Ad 172: Public Utilities
- Econ 101: Intermediate Microeconomic Theory
- Econ 102: Intermediate Macroeconomic Theory
- Econ 105: Business Fluctuations and Forecasting
- Econ 161-62: Public Finance
- Econ 165: Government and Business
- Econ 181-82: International Economics
- Geog 125: Transportation Complexes
- Stat 111-12: Business and Economic Statistics I-II

## GROUP VI: STATISTICS

The following courses provide the basic academic foundation for such positions as financial statistician, planning statistician, industrial statistician, and rate analyst in business and government.

- B Ad 118: Introduction to Data Processing
- Stat 91: Principles of Statistical Methods
- Stat 110: Quality Control and Reliability Techniques
- Stat 111-12: Business and Economic Statistics I-II
- Stat 117: Analysis of Variance
- Stat 118: Correlation and the Chi-square Test I
- Stat 155: Introduction to Probability
- Stat 157-58: Introduction to Mathematical Statistics

## GROUP VII: TRANSPORTATION AND TRAFFIC MANAGEMENT

The following courses provide the basic academic foundation for management positions in transportation firms and in traffic departments of other types of business firms and government agencies. The program should also aid in the preparation for the examinations for membership in the American Society of Traffic and Transportation.

- B Ad 118: Introduction to Data Processing
- B Ad 158: Physical Distribution Management
- B Ad 171: Principles of Transportation
- B Ad 172: Public Utilities
- B Ad 173: Transportation Systems Management
- B Ad 174: Urban Transportation
- B Ad 175: Introduction to Foreign Trade
- Econ 101: Intermediate Microeconomic Theory
- Geog 125: Transportation Complexes
- Hist 179-80: U.S. Economic History
- Stat 111: Business and Economic Statistics I



## GROUP VIII: AUTOMATIC DATA PROCESSING

The following courses provide the basic academic foundation for positions in data processing in government, business, and industry. They also give the student an understanding of the manager's use of data processing as a vital managerial technique.

- B Ad 118: Introduction to Data Processing
- B Ad 119: Data Processing Programming
- B Ad 120: Data Processing Systems
- Stat 111-12: Business and Economic Statistics I-II

**International Business**

This program is designed to provide the basic academic foundation for positions in international business, both in private industry and in government. It consists of 30 semester hours of *required* course work and 30 hours of electives. Any modification of the program must be made with the consent of the adviser.

	Semester Hours
<i>Required—Third and Fourth Years</i>	
B Ad 102: Fundamentals of Management.....	3
B Ad 131: Business Finance.....	3
B Ad 132: International Business Finance.....	3
B Ad 141: Basic Marketing Management.....	3
B Ad 144: International Marketing Management.....	3
B Ad 161: Commercial Law: Contracts, Sales, Agency, and Bailments	3
B Ad 175: Introduction to Foreign Trade.....	3
B Ad 176: International Business Theory and Policy.....	3
B Ad 178: Management of International Business Operations.....	3
Econ 121: Money and Banking.....	30
Elective: Selected from the following in consultation with the adviser	
Total.....	60

**ELECTIVES**

Electives are to be selected from the following, in consultation with the adviser.

- Acct 193: Business Budgeting
- B Ad 143: Marketing Research
- B Ad 158: Physical Distribution Management
- B Ad 162: Commercial Law: Negotiable Instruments, Property, Mortgages
- B Ad 171: Principles of Transportation
- B Ad 173: Transportation Systems Management
- B Ad 174: Urban Transportation
- B Ad 177: Foreign Markets
- B Ad 191: Business Reports and Analyses
- B Ad 193: Management Communication
- B Ad 195: Controllershship
- Econ 101: Intermediate Microeconomic Theory
- Econ 181-82: International Economics
- Geog 126: World Economic Geography
- Geog 151-166: Regional survey courses
- P Sc 167: U.S. Foreign Policy
- P Sc 181-82: Public International Law and Organization
- Stat 111-12: Business and Economic Statistics I-II



## BACHELOR OF SCIENCE IN GEODETIC AND CARTOGRAPHIC SCIENCE

Only a portion of the course work in this four-year curriculum is offered on campus. The Geodetic and Cartographic Science courses are given at the Army Map Service, Environmental Science Services Administration, and the Naval Oceanographic Office, which have the necessary laboratory facilities. Since these installations are some distance from the campus, students should plan to provide their own transportation.

Entrance requirements are stated on pages 6-7, 22, with the exceptions noted below under "Advanced Standing." Residence and scholarship requirements are stated on page 22.

### ADVANCED STANDING

Twelve semester hours of credit may be granted upon the successful completion of validating examinations. No credit will be given for correspondence schools or service schools.

### CURRICULUM

Faculty Adviser: Hyman Orlin, Professorial Lecturer in Mathematics. Telephone: 496-8171.

#### Required—First Year

	Semester Hours
Engl 1, 2: English Composition .....	6
*Geog 51: Introduction to Geography.....	3
*Geog 52: World Regions .....	3
Math 21: Calculus I .....	3
Math 22: Calculus II .....	3
Phys 1: General Physics.....	4
Phys 30: General Physics.....	4
Social Sciences: To be selected from the following.....	6
Anth 1-2: Introductory Anthropology	
Econ 1-2: Principles of Economics	
Hist 39-40: European Civilization in Its World Context	
P Sc 5-6: Introduction to Political Science	
Soc 1-2: Introductory Sociology	

Total..... 32

#### Required—Second Year

Chem 11-12: General Chemistry.....	8
Engl 51-52: Introduction to English Literature or	
Engl 71-72: Introduction to American Literature.....	6
G&CS 1-2: Introduction to Cartography.....	6
Geol 1 or 3: Introductory Geology.....	3
Math 23: Calculus III.....	3
Math 24: Calculus IV.....	3
Stat 107: Statistics for Engineers.....	3

Total..... 32

\* Required for Cartography option; an elective may be substituted for other options.



<i>Required—Third Year</i>		Semester Hours
G&CS 12: Plane Surveying .....		3
G&CS 13: Geodetic Surveying.....		3
G&CS 105: Elementary Geophysics.....		3
G&CS 107: Geomorphology .....		3
G&CS 108: Climatology .....		3
G&CS 110: Map Projections.....		3
Math 111: Mathematics for Engineers and Physicists I.....		3
Math 112: Mathematics for Engineers and Physicists II.....		6
Ocea 101-2: Elementary Oceanography.....		
Total.....		30

**Group Options**

Three areas of specialization are open to students in this program; students select one at the beginning of the fourth year.

<i>Required—Fourth Year</i>		Semester Hours
GROUP I: CARTOGRAPHY		
G&CS 17: Elementary Photogrammetry.....		3
G&CS 18: Intermediate Photogrammetry.....		3
G&CS 111: Cartographic Techniques.....		17
Elective: Selected from the following in consultation with the adviser		
Total.....		26
GROUP II: GEODESY		
G&CS 17: Elementary Photogrammetry.....		3
G&CS 18: Intermediate Photogrammetry.....		3
G&CS 155: Elementary Geodesy .....		3
G&CS 156: Geodetic Astronomy.....		3
G&CS 160: Mathematics of Adjustments and Least Squares.....		11
Elective: Selected from the following in consultation with the adviser		
Total.....		26
GROUP III: OCEANOGRAPHY		
Geol 125: Marine Geology .....		3
Ocea 110: Ocean Dynamics.....		3
Ocea 112: Biological Oceanography.....		17
Elective: Selected from the following in consultation with the adviser		
Total.....		26



## Electives\*

Recommended electives to be selected from the following:

- G&CS 106: Interpretation Theory—Geophysics
- G&CS 112: Advanced Cartography
- G&CS 117: Advanced Photogrammetry
- G&CS 161: Adjustments in Geodesy and Photogrammetry
- Geol 141: Introductory Geochemistry
- Math 124: Introduction to Matrix Theory
- Math 134: Introduction to Boundary Value Problems
- Ocea 111: Ocean Waves and Tides
- Phys 161: Mechanics I
- Phys 162: Mechanics II
- Phys 163: Optics

## The Master's Degrees

THE DEGREE of Master of Science in Administration, offered off campus, will eventually replace all of the Master's degrees now offered off campus, except the degree of Master of Science in International Affairs.

Curricula open to qualified applicants, *other than those in the Joint Military Cooperative Programs*, lead to the degrees of (1) Master of Science in Administration, see pages 34–36; (2) Master of Science in Business Administration, see pages 36–37; (3) Master of Science in Financial Management, see pages 37–38; (4) Master of Science in Governmental Administration, see pages 38–39; and (5) Master of Science in Personnel Administration, see pages 39–40. Curricula open only to qualified applicants in the *Joint Military Cooperative Programs* lead to the degrees of (1) Master of Science in Business Administration, see pages 40–42; (2) Master of Science in International Affairs, see page 42; and (3) Master of Science in Public Administration, see page 43.

Candidates receive the degrees of (1) Master of Science in Administration, Master of Science in Business Administration, Master of Science in Financial Management, Master of Science in Governmental Administration, Master of Science in Personnel Administration, and Master of Science in Public Administration from the School of Government and Business Administration; and (2) Master of Science in International Affairs from the School of Public and International Affairs. These off-campus programs are administered by the College of General Studies.

The curricula provide the opportunity for a mid-career Master's education to qualified students who for geographic or other reasons cannot come to the campus. The University's standards for graduate work are maintained in the off-campus courses, and degree candidates must take the Master's Comprehensive Examinations required of campus students.<sup>†</sup> Any substitution of courses requires approval from the appropriate faculty adviser.

\* Electives should include one of the following courses: Art 31–32, 71–72; Music 3–4; Philosophy 51–52; Religion 9–10, 21, 59–60.

<sup>†</sup> The curriculum of Master of Science in International Affairs offered at the War Colleges is not offered on campus.



**REQUIREMENTS FOR ADMISSION TO MASTER'S CANDIDACY**

Application for Master's candidacy may be made before or immediately after starting course work; it should be made no later than the end of the first semester of registration. No more than 6 semester hours of credit toward the degree will be granted for work taken in nondegree status (before application and while the application is being processed).

The general requirement for Master's candidacy is a Bachelor's degree from a regionally accredited college or university (this general requirement, without further qualification, satisfies the admission requirements to Master's candidacy in the War Colleges), with an over-all quality-point index of 3.00 (a *B* average), adequate undergraduate preparation for the chosen graduate field, and satisfactory performance on the Admission Test for Graduate Study in Business\*. Students with below *B* undergraduate averages may qualify by their scores on the Admission Test for Graduate Study in Business. Students who lack the necessary undergraduate background for the chosen graduate field may qualify by earning a *B* average in prescribed undergraduate courses.

The Admission Test for Graduate Study in Business must be taken prior to application for degree candidacy or during the semester in which application is made. For information concerning the date and place for taking the test, contact the Educational Testing Service, Box 955, Princeton, N.J. 08540.

**ADVANCED STANDING†**

A maximum of 6 semester hours of advanced standing may be credited toward the degree by transfer of credit for approved graduate work taken at an accredited college or university.

Students who are not certain that they will be in this area long enough to complete the degree requirements should be aware that most institutions will accept only 6 hours of transfer credit toward a Master's degree.

**REQUIREMENTS FOR THE DEGREES****RESIDENCE**

A minimum of 24 semester hours of graduate work must be completed while registered as a degree candidate in the College of General Studies.

The thesis and thesis seminar (6 semester hours) may be included in the 24 hours of course work taken in residence. A graduate student who transfers from another division of the University is required to have a minimum of 12 hours of course work as a degree candidate in the College of General Studies.

**SCHOLARSHIP**

An average of *B* or better is required for the Master's degree. For details, see pages 13-15. A student whose scholarship is unsatisfactory may be suspended by the Dean upon recommendation of the appropriate Committee on Scholarship.

\* This is a test of general aptitude and does not presume an undergraduate major in Business Administration.

† Not applicable to candidates for the degrees of Master of Science in Business Administration, Master of Science in International Affairs, or Master of Science in Public Administration in the War Colleges' program.



## THESIS

Theses are required of candidates for the degrees of Master of Science in Business Administration, Master of Science in International Affairs, and Master of Science in Public Administration.

With the approval of the adviser, a thesis may be substituted for 6 semester hours of elective credit toward the degree of Master of Science in Administration, Master of Science in Financial Management, Master of Science in Governmental Administration, and Master of Science in Personnel Administration (see page 18).

The thesis subject and the thesis in its final form must be approved by the director of the thesis and the faculty adviser and presented to the Dean no later than the date announced in the calendar. Printed copies of detailed regulations regarding the form and reproduction of the thesis are available at the Receptionist's desk at the College of General Studies.

Payment of tuition for the thesis entitles the candidate, during the two semesters he registers for thesis (299-300), to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished, additional time (a successive academic year for students who are candidates for degrees from the School of Government and Business Administration; a calendar year for students who are candidates for degrees from the School of Public and International Affairs) may be granted without further tuition payment. The student must, however, maintain continuous registration during this period. In the event the preparation of the thesis extends beyond the additional time granted, as specified above, the student must register for the entire 6 hours of thesis again and pay tuition as for a repeated course.

## COURSE SUBSTITUTION

It is the responsibility of the student to get written approval from the faculty adviser and the Dean prior to registration for any course substitution. Forms for requesting substitution are available at the College of General Studies.

## MASTER'S COMPREHENSIVE EXAMINATIONS

The Master's candidate is required to pass a written Master's Comprehensive Examination. Before applying for the examination, the student must complete the required courses *and any undergraduate courses specified in his admission letter*. In writing the examination, the student is expected to correlate what he has learned in his course work and his reading in the literature of the field. The examinations are conducted at the University in December for students graduating in February and in April for students graduating in June. Dates for the Master's Comprehensive Examinations are announced in the *Off-Campus Schedule of Classes*. Master's Comprehensive Examination dates for the off-campus centers at Maxwell Air Force Base, Ala., and Newport, R.I., will be announced by the Directors of the respective Centers. At the time of the examination a candidate may be required to submit to the examination committee copies of articles published, pertinent staff studies, reports, etc., prepared during the period of graduate study, as additional evidence of Master's competency.



**OFF-CAMPUS MASTER'S PROGRAMS\*****PREREQUISITE**

A student must meet the general requirements for admission to degree candidacy as listed on page 32.

**MASTER OF SCIENCE IN ADMINISTRATION**

The University cannot guarantee that all courses in this curriculum will be offered at every center. However, any off-campus student, who has been admitted to degree candidacy, may arrange to complete his curriculum by registering on campus.

**Required Courses**

	Semester Hours
B&PA 201: Advanced Administrative Management.....	3
†B&PA 204: Quantitative Factors in Administration.....	3
B&PA 207: Human Behavior in Organizations.....	3
B&PA 263: Organization and Management.....	3
B&PA 287: Relations of Government to Business.....	3
Total.....	15
‡Area of Concentration: .....	15
Elective: (B&PA 295 Research Methods, recommended) or	6
Thesis: (B Ad 299-300 or P Ad 299-300).....	6
Total.....	36

**Areas of Concentration****I. AUTOMATIC DATA PROCESSING**

*Faculty Adviser:* John Francis McCarthy, Jr., Associate Professor of Business Administration. Building W, Room 303; Telephone: 676-7089

B&PA 218: Survey of Data Processing.....	3
B&PA 219: Digital Computer Programming Concepts.....	3
B&PA 220: Comparative Digital Computer Systems and their Management .....	3
B&PA 221: Management Information Systems Development and Application .....	3
B&PA 223: Management of a Data Processing Organization.....	3
Total.....	15

\* Not open to students in the Joint Military Cooperative Programs. For Joint Military Cooperative Programs, see pages 40-43.

† B&PA 204 is waived for students electing Operations Research as an area of concentration.

‡ Eighteen semester hours are required in Operations Research area of concentration.



## II. CONTROLLERSHIP

Faculty Adviser: Harry Robert Page, Associate Professor of Business Administration.  
Government 201; Telephone: 676-6115

	Semester Hours
Acct 215: Survey of Managerial Accounting.....	3
Acct 276: Management Planning and Control.....	3
B Ad 235: Financial Management .....	3
B Ad 296: Seminar: Controllership .....	3
B&PA 268: Management Engineering .....	3
Total.....	15

## III. INDUSTRIAL PERSONNEL MANAGEMENT

Faculty Adviser: Joe Lee Jessup, Professor of Business Administration. Government  
312; Telephone: 676-6068

B Ad 208: Personnel Management and Industrial Relations.....	3
B Ad 209: Seminar: Personnel Management.....	3
B Ad 212: Unionism and Collective Bargaining.....	3
B Ad 213: Current Issues in Unionism, Collective Bargaining, and Labor Relations .....	3
P Ad 233: Seminar: Manpower Development and Utilization.....	3
Total.....	15

## IV. MANAGEMENT ENGINEERING

Faculty Adviser: George R. Allen, Associate Professor of Business Administration.  
2129 G Street, Room 405; Telephone: 676-7184

B Ad 250: Procurement and Contracting.....	3
B Ad 261: Business Economics I.....	3
B Ad 291: Seminar: Business Management.....	3
B&PA 228: Applications of Operations Research.....	3
B&PA 268: Management Engineering .....	3
Total.....	15

## V. OPERATIONS RESEARCH\*

Faculty Adviser: Charles Bradley, Professor of Business Economics. Building Y,  
Room 10; Telephone: 676-6378

B&PA 227: Mathematical Programming: Techniques and Applications	3
B&PA 228: Applications of Operations Research.....	3
Additional courses now in preparation.....	12
Total.....	18

\* B&PA 204 Quantitative Factors in Administration is waived in this area of concentration.



## VI. SYSTEMS MANAGEMENT

*Faculty Adviser:* Marvin Milton Wofsey, Associate Professor of Management. 2129 G Street, Room 405; Telephone: 676-7183

	Semester Hours
B&PA 218: Survey of Data Processing.....	3
B&PA 220: Comparative Digital Computer Systems and their Management .....	3
B&PA 223: Management of a Data Processing Organization.....	3
B&PA 228: Applications of Operations Research.....	3
B&PA 269: Management and Information Systems.....	3
Total.....	15

## VII. PUBLIC FINANCIAL MANAGEMENT AND BUDGETING

*Faculty Adviser:* Karl Ernest Stromsem, Professor of Public Administration. Government 201; Telephone: 676-6295

	Semester Hours
Acct 215: Survey of Managerial Accounting.....	3
Econ 218: Survey of Economics.....	3
P Ad 213: Administration in Government.....	3
P Ad 251: Governmental Budgeting .....	3
P Ad 252: Problems in Planning, Programming, and Budgeting.....	3
Total.....	15

## VIII. PUBLIC PERSONNEL MANAGEMENT

*Faculty Adviser:* Joe Lee Jessup, Professor of Business Administration. Government 312; Telephone: 676-6068

	Semester Hours
B Ad 212: Unionism and Collective Bargaining.....	3
P Ad 213: Administration in Government.....	3
P Ad 231: Public Personnel Administration.....	3
P Ad 232: Problems in Public Personnel Management.....	3
P Ad 233: Seminar: Manpower Development and Utilization.....	3
Total.....	15

## MASTER OF SCIENCE IN BUSINESS ADMINISTRATION

*Faculty Adviser:* George Frederick Conner, Assistant Professor of Business Administration. 2129 G Street, Room 406; Telephone: 676-7068

## Required Courses

	Semester Hours
B Ad 297: Case Studies in Business Administration.....	3
B Ad 299: Thesis Seminar.....	3
B Ad 300: Thesis Research.....	3
B&PA 201: Advanced Administrative Management.....	3
B&PA 204: Quantitative Factors in Administration.....	3
B&PA 207: Human Behavior in Organizations.....	9
(A): Area of concentration.....	3
(B) Elective: .....	3
Total.....	30



**\*A. Area of Concentration**

Students must complete one of the three following areas of concentration:

- (1) B&PA 218: Survey of Data Processing (3)  
     B&PA 227: Mathematical Programming: Techniques and Applications (3)  
     B&PA 228: Applications of Operations Research (3)
- (2) B&PA 218: Survey of Data Processing (3)  
     B&PA 219: Digital Computer Programming Concepts (3)  
     B&PA 220: Comparative Digital Computer Systems and their Management (3)
- (3) General  
     Business: Students select 9 semester hours from electives listed below for a concentration in business economics, human factors in administration, personnel, marketing, or managerial accounting

**\*B. Elective Courses**

The student is required to pass a written Master's Comprehensive Examination in two fields. The required courses prepare him for the examination in administrative theory and practice. In preparing for the examination, the student who selects the General Business area of concentration should be careful to select electives that pertain to his particular field of concentration.

- Acct 215: Survey of Managerial Accounting (3)  
 B Ad 208: Personnel Management and Industrial Relations (3)  
 B Ad 209: Seminar: Personnel Management (3)  
 B Ad 210: The Personnel Manager (3)  
 B Ad 241: Advanced Marketing Management (3)  
 B Ad 242: Seminar: Marketing Theory (3)  
 B Ad 261: Business Economics I (3)  
 B Ad 262: Business Economics II (3)  
 B&PA 208: Current Issues in Organizational Behavior (3)  
 B&PA 218: Survey of Data Processing (3)  
 B&PA 223: Management of a Data Processing Organization (3)  
 B&PA 227: Mathematical Programming: Techniques and Applications (3)  
 B&PA 228: Applications of Operations Research (3)  
 B&PA 268: Management Engineering (3)  
 P Ad 213: Administration in Government (3)

**MASTER OF SCIENCE IN FINANCIAL MANAGEMENT**

*Faculty Adviser:* Karl Ernest Stromsem, Professor of Public Administration. Government 201; Telephone: 676-6295

**Required Courses**

The student must complete course work as approved by the faculty adviser from the following courses:

	Semester Hours
Acct 215: Survey of Managerial Accounting.....	3
Acct 231: Contemporary Accounting Theory.....	3

\*The area of concentration and all electives must be approved by the faculty adviser.



	Semester Hours
B Ad 296: Seminar: Controllership.....	3
B&PA 201: Advanced Administrative Management.....	3
B&PA 207: Human Behavior in Organizations.....	3
B&PA 268: Management Engineering.....	3
P Ad 213: Administration in Government.....	3
P Ad 251: Governmental Budgeting.....	3
P Ad 252: Problems in Planning, Programming, and Budgeting.....	3
Stat 101: Basic Principles of Statistical Methods or	
B&PA 204: Quantitative Factors in Administration.....	3
<b>Plan I</b>	
Required courses: .....	24
B Ad 299: Thesis Seminar .....	3
B Ad 300: Thesis Research .....	3
<b>Total</b> .....	30
<b>Plan II</b>	
Required courses: .....	30
B&PA 295: Research Methods .....	3
<b>Total</b> .....	33

**Elective Courses**

A student whose previous background makes it unnecessary for him to take all of the prescribed courses in this program may substitute elective courses, with the written approval of his faculty adviser. A form for this purpose is available at the College of General Studies. Electives may be selected from courses listed under the Personnel Administration Master's program on page 40. The faculty adviser may approve other courses as electives.

**MASTER OF SCIENCE IN GOVERNMENTAL ADMINISTRATION**

*Faculty Adviser:* Waldo Sommers, Professor of Public Administration. Government  
1A; Telephone: 676-6792

**Required Courses**

	Semester Hours
B&PA 201: Advanced Administrative Management.....	3
B&PA 207: Human Behavior in Organizations.....	3
B&PA 268: Management Engineering.....	3
P Ad 213: Administration in Government.....	3
P Ad 231: Public Personnel Administration.....	3
P Ad 251: Governmental Budgeting.....	3
P Ad 252: Problems in Planning, Programming, and Budgeting.....	3
P Ad 298: Case Studies in Public Administration.....	3
<b>Plan I</b>	
Required courses: .....	24
B Ad 299: Thesis Seminar .....	3
B Ad 300: Thesis Research .....	3
<b>Total</b> .....	30



Plan II	Semester Hours
Required courses: .....	24
B&PA 295: Research Methods.....	3
Elective: .....	6
Total.....	33

### Elective Courses

A student whose previous academic preparation makes it unnecessary for him to take all of the prescribed courses in this program may substitute elective courses, with the written approval of the faculty adviser. A form for this purpose is available at the College of General Studies. Electives may be selected from courses listed under the Personnel Administration Master's program on page 40. The faculty adviser may approve other courses as electives.

### MASTER OF SCIENCE IN PERSONNEL ADMINISTRATION

Faculty Adviser: Joe Lee Jessup, Professor of Business Administration. Government 312; Telephone: 676-6068

### Required Courses

The student must complete at least one course in each of the five major areas:

#### Personnel Principles

B Ad 209: Seminar: Personnel Management.....	3
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#### Human Relations and Motivation

B&PA 207: Human Behavior in Organizations.....	3
Psyc 245: Seminar: Organizational Behavior.....	3

#### Labor Relations

B Ad 212: Unionism and Collective Bargaining.....	3
B Ad 213: Current Issues in Unionism, Collective Bargaining, and Labor Relations.....	3

#### Management

B&PA 201: Advanced Administrative Management.....	3
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#### Quantitative Methods

B&PA 204: Quantitative Factors in Administration.....	3
Stat 101: Basic Principles of Statistical Methods.....	3

#### Plan I

Required courses: .....	15
Elective: .....	9
Thesis: B Ad 299-300, P Ad 299-300, or Psyc 299-300.....	6
Total.....	30



Plan II		Semester Hours
Required courses:	.....	15
Elective:	.....	15
B&PA 295: Research Methods.....	.....	3
Total.....	.....	33

#### Elective Courses

A student whose previous background makes it unnecessary for him to take all of the prescribed courses in this program may substitute elective courses with the written approval of the faculty adviser. A form for this purpose is available at the College of General Studies. Electives may be selected from courses listed below. The faculty adviser may approve other related courses as electives.

- B Ad 208: Personnel Management and Industrial Relations (3)
- B Ad 297: Case Studies in Business Administration (3)
- B&PA 211: Leadership and Executive Performance (3)
- B&PA 218: Survey of Data Processing (3)
- B&PA 268: Management Engineering (3)
- P Ad 232: Problems in Public Personnel Management (3)
- P Ad 233: Seminar: Manpower Development and Utilization (3)
- P Ad 298: Case Studies in Public Administration (3)
- Psyc 246: Seminar: Personnel Measurement Techniques (3)

#### JOINT MILITARY COOPERATIVE PROGRAMS

Robert Carter Burns, A.M., *Director*

These programs are offered in cooperation with the Industrial College of the Armed Forces and the National War College, Fort McNair, Washington, D. C. 20315; the Air War College and the Command and Staff College, Air University, Maxwell Air Force Base, Ala. 36113; and the Naval War College, Newport, R.I. 02844.

Robert Carter Burns, A.M., *Director, National War College Center, Fort McNair, Washington, D.C.*

Walter Inman, Ph.D., *Acting Director, Air University Center, Maxwell Air Force Base, Ala.*

Clyde Bailey Sargent, Ph.D., *Acting Director, Naval War College Center, Newport, R.I.*

#### PREREQUISITE

An approved Bachelor's degree from an accredited college or university.

#### MASTER OF SCIENCE IN BUSINESS ADMINISTRATION

##### INDUSTRIAL COLLEGE OF THE ARMED FORCES

*Faculty Adviser:* Edwin Timbers, Professor of Public Administration. Government  
206; Telephone: 676-6825



Open only to current students and faculty and to graduates of the class of 1961 of the Industrial College of the Armed Forces.

### Required Courses

	Semester Hours
B Ad 299: Thesis Seminar .....	3
B Ad 300: Thesis Research .....	3
B&PA 201: Advanced Administrative Management.....	3
B&PA 204: Quantitative Factors in Administration.....	3
Econ 217: Survey of Economics.....	3

#### Plan I

Required courses:	15
*B&PA 280—	
81-82: Managerial Aspects of National Security.....	7
(A) Elective: .....	8
Total.....	30

#### Plan II

Required courses:	15
*B&PA 280—	
81-82: Managerial Aspects of National Security.....	6
(A) Elective: .....	6
(B) Elective: .....	3
Total.....	30

#### (A) Elective

- B Ad 235: Financial Management (2)
- B Ad 241: Advanced Marketing Management (2)
- B Ad 297: Case Studies in Business Administration (2)
- B&PA 207: Human Behavior in Organizations (2)

#### (B) Elective

- Acct 215: Survey of Managerial Accounting (3)
- B&PA 207: Human Behavior in Organizations (3)
- B&PA 218: Survey of Data Processing (3)
- B&PA 221: Management Information Systems Development and Application (3)
- B&PA 287: Relations of Government to Business (3)
- P Ad 252: Problems in Planning, Programming, and Budgeting (3)

### AIR UNIVERSITY

Faculty Adviser: Paul Bentley Jones, Assistant Professor of Business Administration.  
Room 9, Building 823, Maxwell Air Force Base, Ala.; Telephone: 265-5621, Extension 7881

Open only to current students and faculty of the Command and Staff College.

\* Industrial College of the Armed Forces curriculum only.



## Required Courses

	Semester Hours
Acct 215: Survey of Managerial Accounting.....	2
B Ad 235: Financial Management.....	2
B Ad 241: Advanced Marketing Management.....	2
B Ad 297: Case Studies in Business Administration.....	2
B Ad 299: Thesis Seminar.....	3
B Ad 300: Thesis Research.....	3
B&PA 201: Advanced Administrative Management.....	2
B&PA 207: Human Behavior in Organizations.....	2
*B&PA 280-81: Managerial Aspects of National Security.....	8
Econ 217: Survey of Economics.....	2
Stat 101: Basic Principles of Statistical Methods.....	2
Total.....	30

## Elective Courses

A student whose previous academic preparation makes it unnecessary for him to take all of the prescribed courses in this program may substitute elective courses with the written approval of the faculty adviser.

## MASTER OF SCIENCE IN INTERNATIONAL AFFAIRS

*Faculty Adviser:* Hiram Miller Stout, Professor of International Affairs. Maury 22;  
Telephone: 676-6240

This special degree program is offered in cooperation with the Air War College, Air University, Maxwell Air Force Base, Ala.; the National War College, Fort McNair, Washington, D. C.; and the Naval War College, Newport, R. I. It is open only to current students and faculty and to graduates eligible under the contractual arrangements.

	Semester Hours
†I Af 260: Fundamentals of National Power.....	3
†I Af 261: International and U. S. Foreign Policy.....	3
†I Af 262: National Security Policy of the United States.....	3
†I Af 299-300: Thesis Research.....	6
Elective: From the following or related courses as approved by the faculty adviser.....	15
Econ 251: Economic Development (3)	
Hist 246: Research Seminar: Russian and European History (3)	
†I Af 256: Diplomacy Between the World Wars (3)	
†I Af 263: Intercultural Relations (3)	
†I Af 297: Readings in International Affairs (1, 2, or 3)	
P Sc 172: International Organization (3)	
P Sc 212: Seminar: Comparative Government and Politics (3)	
†P Sc 283: Topics in International Law (3)	
†P Sc 285: Diplomacy since World War II (3)	
Total.....	30

\* Command and Staff College, Air University curriculum only.

† War Colleges' curricula only.



## MASTER OF SCIENCE IN PUBLIC ADMINISTRATION

### AIR UNIVERSITY

*Faculty Adviser:* Lowell Cyrus Smith, Assistant Professor of Business and Public Administration. Room 9, Building 823, Maxwell Air Force Base, Ala.; Telephone: 265-5621, Extension 7881

This is a special degree program offered in cooperation with the Command and Staff College, Air University, Maxwell Air Force Base, Ala. It is open only to current students and faculty of the Command and Staff College.

### Required Courses

	Semester Hours
Acct 215: Survey of Managerial Accounting.....	2
B&PA 201: Advanced Administrative Management.....	2
B&PA 207: Human Behavior in Organizations.....	2
*B&PA 280-81: Managerial Aspects of National Security.....	8
P Ad 213: Administration in Government.....	2
P Ad 251: Governmental Budgeting.....	2
P Ad 252: Seminar: Planning and Programming.....	2
P Ad 298: Case Studies in Public Administration.....	2
P Ad 299: Thesis Seminar.....	3
P Ad 300: Thesis Research.....	3
Stat 101: Basic Principles of Statistical Methods.....	2
Total.....	30

### Elective Courses

A student whose previous academic preparation makes it unnecessary for him to take all of the prescribed courses in this program may substitute elective courses with the written approval of the faculty adviser.

## Conferences, Seminars, and Institutes

THE COLLEGE OF GENERAL STUDIES presents a variety of conferences and seminars designed to meet the requirements of professional and business groups. Many are held at Airlie House, near Warrenton, Virginia.

Among these are Middle Management Training and Technological Updating Programs for the International Business Machines Corporation, short courses on Space Power Systems for interested industries, and a Superintendent-Foreman Training School program sponsored by the Mechanical Contractors Association of the District of Columbia.

Each year, in cooperation with the School of Medicine, a Forum for International Medical Scholars is offered for foreign doctors working in American hospitals under the auspices of the Department of Health, Education and Welfare. Conferences have also been held in cooperation with the U.S. Office of Education on such topics as Planning for Classics and the Present Status of Educational Research Activities.

\* Command and Staff College, Air University curriculum only.



For further information, consult Richard Harold Ross, A.M., Director of Conferences, Seminars, and Institutes, College of General Studies. Telephone: 676-7053.

## Continuing Education for Women

Ruth H. Osborn, A.M., Ed.D., *Director of Continuing Education for Women*

IN ACCORDANCE with the University's policy of encouraging adults to continue their studies throughout life, the College of General Studies in 1964 initiated a special program for women.

The following program has been developed to meet the needs of women in the metropolitan Washington area.

### DEVELOPING NEW HORIZONS FOR WOMEN

"Developing New Horizons for Women," a noncredit seminar, is offered each semester on campus to assist women in developing their potential by an analysis of themselves as individuals and as women; and by exploring educational, occupational, and community service opportunities.

Participants attend class one day a week from 10 to 12 a.m. for 15 weeks. The seminar consists of lectures, group discussion, testing, and an individual counseling conference at the conclusion of the seminar.

Most of the women attending this seminar are homemakers, who range in age from 21 to 60. The median age is 41. Their educational background varies from those with no college to those who have earned graduate or professional degrees.

### OFF-CAMPUS DAYTIME CREDIT COURSES

As an expansion of the "Developing New Horizons for Women" seminar, the College of General Studies, in September, 1965, began offering off-campus credit courses throughout the metropolitan Washington area at hours and locations convenient for the homemaker. Classes meet one day a week from 10 a.m. to 12:30 p.m. for 15 weeks.

Upon successful completion of off-campus courses, many women have been encouraged to undertake degree programs at The George Washington University.

For locations and course offerings, see the *Off-Campus Schedule of Classes* or telephone (676-7038) the Continuing Education for Women office for current literature.

## Noncredit Programs

IN RECOGNITION of the impact of the increasing complexity and specialization of modern life, the College of General Studies sponsors credit and noncredit courses, institutes, lectures, and programs designed to encourage continuing education for all throughout life.



Courses in the liberal arts are offered to widen the horizons of those who have been forced to specialize to meet the requirements of technical professions. Refresher courses and seminars are offered to help specialists keep abreast of rapid advancement of knowledge and to facilitate the return of women to academic life. Courses on writing, speaking, and modern languages provide opportunities for increasing skill in self-expression. Programs to develop leadership are planned in cooperation with organizations.

A regular program of noncredit courses without entrance requirements is offered each semester by the College. Informal off-campus and on-campus programs and courses of any desired length may be initiated at any time at the request of an interested group.

Information about entering or initiating courses in continuing education may be obtained from Jessie Edith Mullins, A.M., Director of Noncredit Courses; Telephone: 676-7047. For details and descriptions of the courses, contact the College of General Studies.

Off-campus noncredit courses include the following list.

#### **COURSES DESIGNED TO INCREASE PERSONAL COMPETENCE IN EVERYDAY LIVING**

AN INTRODUCTION TO CREATIVE THINKING  
FUNDAMENTALS OF INVESTMENT  
INVESTMENT MANAGEMENT  
MANAGING YOUR MONEY  
PLANNING FOR THE LATER DECADES OF LIFE  
PSYCHOLOGY APPLIED TO EVERYDAY LIVING  
VOICE AND DICTION

#### **COURSES OFFERED TO IMPROVE VOCATIONAL AND PROFESSIONAL COMPETENCE**

BUSINESS MANAGEMENT INSTITUTE  
EFFECTIVE SPEECH COMMUNICATION  
EXECUTIVE SEMINAR: EFFECTIVE ORAL COMMUNICATION  
GROUP DISCUSSION AND CONFERENCE LEADERSHIP  
MANAGEMENT COMMUNICATION  
MANAGEMENT FOR RESEARCH, DEVELOPMENT, AND TESTING LABORATORIES  
MATHEMATICAL AND STATISTICAL TOPICS FOR ACCOUNTANTS  
MATHEMATICS REFRESHER  
PREPARATION OF SUMMARIES  
PROFESSIONAL WRITING (Introductory)  
PROFESSIONAL WRITING (Advanced)  
SHORTHAND REFRESHER  
STUDIES IN MANAGEMENT



WRITING FOR CHILDREN

WRITING FOR TELEVISION AND RADIO

WRITTEN COMMUNICATION

### **COURSES PLANNED FOR THE ENRICHMENT OF HOME AND FAMILY LIFE**

BUILDING OR BUYING YOUR HOME

ENJOYING ART WITH YOUR CHILD

HELPING YOUR TEENAGER UNDERSTAND HIMSELF AND HIS WORLD

INSTITUTE FOR PARENTS

UNDERSTANDING MODERN MATHEMATICS

### **WIDENING HORIZONS AND INCREASING ENJOYMENT OF LIFE THROUGH THE ARTS**

CITY AND NATION SEMINARS

FRANCE THROUGH ITS LITERATURE

INTRODUCTION TO THE CULTURAL HISTORY OF RUSSIA

LANGUAGES FOR THE TOURIST

MUSIC APPRECIATION

SILK SCREEN PRINTING

STUDIO ART (Beginning Drawing and Painting)

THE ART OF THE THEATER

UNDERSTANDING MODERN DANCE THROUGH PARTICIPATION

UNDERSTANDING THE ARTS

### **UNDERSTANDING MODERN SCIENCE**

DESCRIPTIVE ASTRONOMY

REFRESHER COURSES IN SCIENCE

### **PROGRAM SERVICE FOR ORGANIZATIONS**

PARLIAMENTARY PROCEDURE

PROGRAM PLANNING FOR ORGANIZATIONS

### **ORIENTATION AND TRAINING PROGRAMS FOR STUDENTS**

AMERICAN SPEECH AND DICTION

HOW TO STUDY

TAX ADMINISTRATION

WORKSHOP FOR FOREIGN STUDENTS



**OTHER PROGRAMS IN THE NATION'S CAPITAL**

ADVANCED GENEALOGY SEMINAR

GENEALOGY AND HERALDRY

HISTORY OF ART

LOOKING AT PAINTINGS

SEMINAR ON RELIGION

THE LITERARY MARKETPLACE

TRADITIONAL WASHINGTON AND ITS HERITAGE

**Educational Technology Center**Timothy E. Smith, A.M., *Director*

THE CENTER provides assistance to the University Faculty in the utilization of audio-visual materials and equipment.

**Off-Campus Centers**

**Accounts, Bureau of (See Department of the Treasury)**

**Air University Center, Maxwell Air Force Base, Ala. 36113**

Education Officer: George D. Rastall

Office: Building 625

Telephone: Area code 205, 265-5621, Extension 5702

Acting Director for the University at Maxwell: Walter Inman

Office: Building 823

Telephone: Area code 205, 265-5621, Extension 7191

Type of Course Offered:

Air War College—Graduate program leading to the degree of Master of Science in International Affairs

Air Command and Staff College—Graduate programs leading to the degrees of Master of Science in Business Administration and Master of Science in Public Administration

Length of Courses: Fifteen weeks

Open to students and faculty of the Air War College and the Air Command and Staff College

**Alexandria Public Schools, Alexandria, Va. 22314**

Robert Parlier, Director, Secondary Education

Office: 418 S. Washington Street

Telephone: 549-9100



**Anne Arundel County Public Schools, Annapolis, Md. 21402**

Mrs. Ruth Dudderar, Assistant Superintendent

Office: Anne Arundel County Board of Education, Green Street

Telephone: Area code 301, 268-3345

**Arlington County Public Schools, Arlington, Va. 22201**

Harold Mack, Director, Secondary Education

Office: 1426 N. Quincy Street

Telephone: 522-7700

**Army Map Service, Washington, D.C. 20315**

Education Directors: Jerome E. McClain, Chief, Employee Development Division;

Edward T. O'Brien, Personnel Specialist

Office: Erskine Hall, 6500 Brooks Lane, N.W.

Telephone: 986-2385

Field Representative for the University: John H. McCalla

Telephone: 676-7024

Type of Course Offered: Undergraduate program leading to the degree of Bachelor of Science in Geodetic and Cartographic Science

Length of Courses: Fifteen weeks

Open to employees of the Army Map Service and other government employees, by permission of the Commanding Officer of the Army Map Service

**Atlantic Research Corporation, Alexandria, Va. 22314**

Education Director: Frederick H. Black, Jr., Assistant Director of Personnel  
Office: Room 313E, Corporate Headquarters Building, Shirley Highway at Edsall Road

Telephone: 354-3400, Extension 504

Field Representative for the University: Michael G. O'Connor

Telephone: 676-7023

Length of Courses: Fifteen weeks

Open to selected personnel, by permission of the Assistant Director of Personnel, Atlantic Research Corporation

**Building T-7, Gravelly Point, Washington, D.C. 20315**

Program Coordinators: Thomas M. Harvey and Neil Lerch

Office: Room 2518, Building T-7

Telephone: 697-9519 (Mr. Harvey); 697-1590 (Mr. Lerch)

Field Representative for the University: Alvin R. Glafka

Telephone: 676-7064

Length of Courses: Fifteen weeks in fall and spring semesters; seven and one-half weeks in summer sessions

Open only to active duty military personnel and Department of Defense civilians

**Bureau of the Census, Washington, D.C. 20233**

Education Directors: James Vawter, Chief, Employee Development Branch, Personnel Division; John Hickey, Employee Development Officer, Personnel Division

Office: Room 1370, Building FOB 3, Suitland, Md.

Telephone: Area code 301, 440-1524



Field Representative for the University: John H. McCalla  
Telephone: 676-7024  
Length of Courses: Fifteen weeks  
Open to all employees of the Bureau of the Census and the Naval Oceanographic Office, and to other persons by permission

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**Bureau of Customs, Washington, D.C. 20226**

\*MEMBER OF FEDERAL TRIANGLE EDUCATIONAL ASSOCIATION

Education Director: James J. Doherty, Director, Training and Career Section  
Office: 2100 K Street, N.W.

Telephone: 964-2548

Field Representative for the University: Robert W. Stewart, Jr.

Telephone: 676-7018

Length of Courses: Fifteen weeks

Open to employees of the Department of the Treasury and to personnel of other government agencies by permission

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**Bureau of Domestic and International Business, Washington, D.C. 20230**

\*MEMBER OF FEDERAL TRIANGLE EDUCATIONAL ASSOCIATION

Education Directors: Andrew J. Ondorf, Chief, Employee Development Branch; Mrs. Jane deLauder and Mike Patchan, Jr., Employee Development Officers

Office: Room 1515, Commerce Department Building, 14th Street and Constitution Avenue, N.W.

Telephone: 967-4974

Field Representative for the University: Robert W. Stewart, Jr.

Telephone: 676-7018

Length of Courses: Fifteen weeks

Open to employees of the Department of Commerce and to personnel of other government agencies by permission

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**Bureau of Narcotics, Washington, D.C. 20226**

\*MEMBER OF FEDERAL TRIANGLE EDUCATIONAL ASSOCIATION

Education Director: Nathanael Bentson, Personnel Officer

Office: Room 603, 633 Indiana Avenue, N.W.

Telephone: 964-3798 or 964-4831

Field Representative for the University: Robert W. Stewart, Jr.

Telephone: 676-7018

Length of Courses: Fifteen weeks

Open to employees of the Department of the Treasury and to personnel of other government agencies by permission

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**Bureau of Naval Personnel, Washington, D.C. 20370**

Education Directors: Capt. J.J. Creamer, USN, Head, Education and Training Branch; DeWitt Fisher, Deputy Head; Paul L. Frantz, Special Programs Coordinator

Office: Room 4077, Arlington Annex

Telephone: 694-2403 or 694-2776

\* An organization of Federal Agencies situated in the Federal Triangle Area of downtown Washington, D.C.



Field Representative for the University: Joseph E. Johnston  
Telephone: 676-7022

Length of Courses: Fifteen weeks

Open to military personnel on active duty in the Department of the Navy by quota assigned to the various bureaus and offices.

**Calvert County Public Schools, Prince Frederick, Md. 20678**

Maurice A. Dunkle, Superintendent of Schools

Office: Calvert County School Board, Dares Beach Road

Telephone: Area code 301, 535-1700

**Charles County Public Schools, LaPlata, Md. 20646**

Charles Stackey, Assistant Superintendent

Office: Charles County Board of Education, Health and Education Building

Telephone: Area code 301, 934-4671

**Civil Service Commission, Washington, D.C. 20415**

\*MEMBER OF FEDERAL TRIANGLE EDUCATIONAL ASSOCIATION

Education Director: John W. Morgan, Director of Personnel

For information contact Employee Development Officer, Personnel Division, Room 1679, 1900 E Street, N.W.

Telephone: 343-6119

Field Representative for the University, Robert W. Stewart, Jr.

Telephone: 676-7018

Length of Courses: Fifteen weeks

Open to employees of the Civil Service Commission and to personnel of other government agencies by permission

**Coast and Geodetic Survey (see Environmental Science Services Administration)**

**Coast Guard, Washington, D.C. 20226**

\*MEMBER OF FEDERAL TRIANGLE EDUCATIONAL ASSOCIATION

Education Directors: Jasper L. Kranke, Supervisory Training Officer; Carl W. Easton, Training Officer

Office: Room 3012, U.S. Coast Guard Building, 1300 E Street, N.W.

Telephone: 964-8103

Field Representative for the University, Robert W. Stewart, Jr.

Telephone: 676-7018

Length of Courses: Fifteen weeks

Open to employees of the Coast Guard and to personnel of other government agencies by permission

**David Taylor Model Basin (see Naval Ship Research and Development Center)**

\* An organization of Federal Agencies situated in the Federal Triangle Area of downtown Washington, D.C.



**Department of Justice, Washington, D.C. 20530**

\*MEMBER OF FEDERAL TRIANGLE EDUCATIONAL ASSOCIATION

Education Director: Daniel Keenan, Departmental Training Officer  
 Office: Room 1226, Justice Department Building, 10th Street and Pennsylvania Avenue, N.W.  
 Telephone: 737-8200, Extension 3124  
 Field Representative for the University, Robert W. Stewart, Jr.  
 Telephone: 676-7018  
 Length of Courses: Fifteen weeks  
 Open to employees of the Department of Justice and to personnel of other government agencies by permission

**Department of Labor, Washington, D.C. 20210**

\*MEMBER OF FEDERAL TRIANGLE EDUCATIONAL ASSOCIATION

Education Director: Kenneth R. Bute  
 Office: Room 6419, Labor Department Building, 14th Street and Constitution Avenue, N.W.  
 Telephone: 961-2101  
 Field Representative for the University, Robert W. Stewart, Jr.  
 Telephone: 676-7018  
 Length of Courses: Fifteen weeks  
 Open to employees of the Department of Labor and to personnel of other government agencies by permission.

**Department of State, Washington, D.C. 20520**

Liaison Officer: Mrs. Barbara Morlet, Special Assistant for Extension Studies, Office for Academic Relations  
 Office: Room 1106, Foreign Service Institute, State Annex 3, Washington, D.C.  
 Telephone: 383-8549 or 383-5919  
 Field Representative for the University, Robert W. Stewart, Jr.  
 Telephone: 676-7018  
 Length of Courses: Fifteen weeks  
 Open to employees of the Department of State, C.I.A., and U.S.I.A.

**Department of the Treasury, Washington, D.C. 20226****Bureau of Accounts**

\*MEMBER OF FEDERAL TRIANGLE EDUCATIONAL ASSOCIATION

Education Director: David L. Core, Employee Development Officer  
 Office: Room 108, Treasury Annex Number 1, Pennsylvania Avenue and Madison Place, N.W.  
 Telephone: 964-8301  
 Field Representative for the University, Robert W. Stewart, Jr.  
 Telephone: 676-7018

\* An organization of Federal Agencies situated in the Federal Triangle Area of downtown Washington, D.C.



Length of Courses: Fifteen weeks

Open to employees of the Department of the Treasury and to personnel of other government agencies by permission

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**District of Columbia General Hospital, Washington, D.C. 20003**

Associate Director, Nursing Service Education: Miss Virginia Sage

Office: Anne Archbold Hall, District of Columbia General Hospital, 19th and Massachusetts Avenue, S.E.

Telephone: 547-9200, Extension 5336

Field Representative for the University: John H. McCalla

Telephone: 676-7024

Length of Courses: Fifteen weeks

Open to employees of the District of Columbia General Hospital and others by permission

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**District of Columbia Government, Washington, D.C. 20001**

\*MEMBER OF FEDERAL TRIANGLE EDUCATIONAL ASSOCIATION

Education Directors: Benjamin Ludwig, Chief of Training; C. Howard Larson, Employee Development Officer

Office: Room 209, District of Columbia Government Building, 499 Pennsylvania Avenue, N.W.

Telephone: 629-2270 or 629-2997

Field Representative for the University: Robert W. Stewart, Jr.

Telephone: 676-7018

Length of Courses: Fifteen weeks

Open to employees of the District of Columbia Government and to personnel of other government agencies by permission

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**Education Courses for Teachers (see separate listings under individual Public Schools)**

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**Environmental Science Services Administration, Rockville, Md. 20852**

Education Directors: Mrs. Muriel Christgau, Training Branch, Personnel and Safety Division; Paul F. Murphy, Employee Development Officer

Office: Room 412, Building 5, Washington Science Center, 11800 Old Georgetown Road, Rockville, Md.

Telephone: 496-8261

Field Representative for the University: John H. McCalla

Telephone: 676-7024

Type of Course Offered: Undergraduate courses leading to the degree of Bachelor of Science in General Studies and Bachelor of Science in Geodetic and Cartographic Science

Length of Courses: Fifteen weeks

Open to all employees of the Department of Commerce and to other government employees by permission

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\* An organization of Federal Agencies situated in the Federal Triangle Area of downtown Washington, D.C.



**Fairfax County Public Schools, Fairfax, Va. 22150**

W. Harold Ford, Assistant Superintendent for Instruction  
Office: 10700 Page Avenue  
Telephone: 273-6500

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**Federal Aviation Agency, Washington, D.C. 20553**

\*MEMBER OF FEDERAL TRIANGLE EDUCATIONAL ASSOCIATION

Education Director: Miss Beverly McCarthy, Employee Development Officer  
Office: Room 505, 800 Independence Avenue, S.W.  
Telephone: 962-5673

Field Representative for the University, Robert W. Stewart, Jr.  
Telephone: 676-7018

Length of Courses: Fifteen weeks

Open to employees of the Federal Aviation Agency and to personnel of other government agencies by permission

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**Federal Bureau of Investigation, Washington, D.C. 20535**

Special Agent: William E. Clark, Personnel Office

Office: Room 4513, Justice Department Building, 9th Street and Pennsylvania Avenue, N.W.

Telephone: 393-7100, Extension 402

Field Representative for the University: John H. McCalla

Telephone: 676-7024

Length of Courses: Fifteen weeks

Open to employees of the Federal Bureau of Investigation only

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**Federal Communications Commission, Washington, D.C. 20554**

\*MEMBER OF FEDERAL TRIANGLE EDUCATIONAL ASSOCIATION

Education Director: Mrs. June Eisenberger

Office: Room 200, 521 12th Street, N.W.

Telephone: 393-3620, Extension 165

Field Representative for the University, Robert W. Stewart, Jr.

Telephone: 676-7018

Length of Courses: Fifteen weeks

Open to employees of the Federal Communications Commission and to personnel of other government agencies by permission

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**Federal Reserve Board, Washington, D.C. 20551**

Education Directors: Mrs. June E. Burns, Assistant to the Director, Division of Personnel Administration; Miss Sudelle Rice, Personnel Technician

Office: Federal Reserve Building, 20th Street and Constitution Avenue, N.W.

Telephone: 737-1100, Extension 435 (Mrs. Burns); Extension 404 (Miss Rice)

Field Representative for the University, Robert W. Stewart, Jr.

Telephone: 676-7018

Length of Courses: Fifteen weeks

Open to all government employees and others by permission

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\* An organization of Federal Agencies situated in the Federal Triangle Area of downtown Washington, D.C.



**Fort Belvoir, Va. 22060**

Education Director: Eric Eber; John R. Gantz, Education Adviser

Office: Building T-1483

Telephone: 780-1100, Extension 43154 or 44546

Field Representative for the University: Michael G. O'Connor

Telephone: 676-7023

Length of Courses: Fifteen weeks in fall and spring semesters; seven and one-half weeks in summer sessions

Open to military and civilian personnel of the Army and to other government employees, by permission of the Commanding Officer of Fort Belvoir

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**Fort Eustis, Va. 23604**

Education Director: John Williams

Office: Building S711, Educational Development Services, Lee Blvd. and 12th Street

Telephone: Area code 703, 878-3731 or 878-5508

Director for the University at The George Washington University Center (Tidewater Area), Fort Monroe, Va.: Robert C. Sedwick

Office: Building T-181

Telephone: 727-3363 or 727-3770

Length of Courses: Fifteen weeks in fall and spring semesters; seven and one-half weeks in summer sessions

Open to military and civilian personnel of the Army and to other government employees, by permission of the Commanding Officer of Fort Eustis

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**Fort McNair, Washington, D.C. 20315**

Educational Adviser: Miss Margaret Lockwood

Office: Building 20A, Second Floor, Post Education Center

Telephone: 527-9400, Extension 268

Field Representative for the University: Earl J. Ross

Telephone: 676-7040

Length of Courses: Fifteen weeks in fall and spring semesters; seven and one-half weeks in summer sessions

Open to military and civilian personnel of the Army and to other government employees, by permission of the Commanding Officer of Fort McNair

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**Fort George G. Meade, Md. 20755**

Education Director: Gustaf E. Berglund

Office: Building 303, Army Education Center

Telephone: 677-6421

Field Representative for the University: John F. Lobuts

Telephone: 676-7015

Length of Courses: Fifteen weeks

Open to military and civilian personnel of the Army and to other government employees, by permission of the Commanding Officer of Fort George G. Meade

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**Fort Monroe, Va. 23351**

Education Director: Paul Rahenkamp

Office: Building T-183, Education Center

Telephone: Area code 703, 727-2454 or 727-3692



Director for the University at The George Washington University Center (Tidewater Area), Fort Monroe, Va.: Robert C. Sedwick

Office: Building T-181

Telephone: 727-3363 or 727-3770

Length of Courses: Fifteen weeks

Open to military and civilian personnel of the Army and to other government employees, by permission of the Commanding Officer of Fort Monroe

#### **Fort Myer, Va. 22208**

Educational Adviser: Miss Margaret Lockwood

Office: Building 604, South Area, Post Education Center

Telephone: 697-0607

Field Representative for the University: Joseph E. Johnston

Telephone: 676-7022

Length of Courses: Fifteen weeks in fall and spring semesters; seven and one-half weeks in summer sessions

Open to military and civilian personnel of the Army and to other government employees, by permission of the Commanding Officer of Fort Myer

#### **Gramax Building, 8060 13th Street, N.W., Silver Spring, Md. 20910**

Education Directors: Mrs. Muriel Christgau, Training Branch, Personnel and Safety Division; Paul F. Murphy, Employee Development Officer

Office: Room 412, Building 5, Washington Science Center, 11800 Old Georgetown Road, Rockville, Md.

Telephone: Area code 301, 496-8261

Field Representative for the University: John H. McCalla

Telephone: 676-7024

Type of Course Offered: Undergraduate courses leading to the degrees of Bachelor of Science in General Studies and Bachelor of Science in Geodetic and Cartographic Science

Length of Courses: Fifteen weeks

Open to all employees of the Department of Commerce and to other government employees by permission

#### **Gravelly Point (see Building T-7)**

#### **Industrial College of the Armed Forces, Fort McNair, Washington, D.C. 20315**

Project Officer: Col. Haydon J. Price, USA

Office, Room 206, Industrial College of the Armed Forces

Telephone: 695-8305

Director for the University: Edwin Timbers

Office: Room 206, Hall of Government, 710 Twenty-first Street, N.W.

Telephone: 676-6825

Type of Course Offered: Graduate program leading to the degree of Master of Science in Business Administration

Length of Courses: Fifteen weeks

Open to students and faculty of the Industrial College of the Armed Forces



**Internal Revenue Service, Washington, D.C. 20224****\*MEMBER OF FEDERAL TRIANGLE EDUCATIONAL ASSOCIATION**

Education Directors: Howard R. Richardson, Chief, National Office Training Branch;  
Miss Sallie Wildasin, Miss Ruby Bennett, Employee Development Training Officers  
Office: Room 1315, Internal Revenue Service Building, 12th Street and Constitution Avenue, N.W.

Telephone: 964-3931

Field Representative for the University, Robert W. Stewart, Jr.

Telephone: 676-7018

Length of Courses: Fifteen weeks

Open to employees of the Department of the Treasury and to personnel of other government agencies by permission

**Interstate Commerce Commission, Washington, D.C. 20423****\*MEMBER OF FEDERAL TRIANGLE EDUCATIONAL ASSOCIATION**

Education Director: Dyrck van Duyl, Training Officer

Office: Room 1418, Interstate Commerce Building, 12th Street and Constitution Avenue, N.W.

Telephone: 737-9765, Extension 7116

Field Representative for the University, Robert W. Stewart, Jr.

Telephone: 676-7018

Length of Courses: Fifteen weeks

Open to employees of the Interstate Commerce Commission

**Langley Air Force Base, Va. 23365**

Education Director: Robert J. Dewey

Office: Building 1347

Telephone: 764-3520

Director for the University at The George Washington University Center (Tidewater Area), Fort Monroe, Va.: Robert C. Sedwick

Office: Building T-181

Telephone: Area code 703, 727-3363 or 727-3770

Length of Courses: Fifteen weeks in fall and spring semesters; seven and one-half weeks in summer sessions

Open to military and civilian personnel of the Air Force and to other government employees, by permission of the Commanding Officer of Langley Air Force Base

**Loudoun County Public Schools, Leesburg, Va. 22075**

Caleb J. Gibson, Director of Instruction

Mrs. Ruth D. Schulke, Supervisor, Elementary Education

Office: Loudoun County School Board, 20 Union Street

Telephone: Area code 703, 777-2570

\* An organization of Federal Agencies situated in the Federal Triangle Area of downtown Washington, D.C.



**Main Navy Building, Washington, D.C. 20360**

Education Directors: Ralph G. Salvagno, Head, Training Branch, DCPD; Miss Kathleen V. Sullivan, Employee Development Officer

Office: Room 0116, Main Navy Building, Constitution Avenue at 18th Street, N.W.

Telephone: 696-6155

Field Representative for the University, Robert W. Stewart, Jr.

Telephone: 676-7018

Length of Courses: Fifteen weeks

Open to military and civilian personnel of the Department of Defense

**Montgomery County Public Schools, Rockville, Md. 20850**

Charles Proctor, Director, Staff Development; James Crabtree, Teacher Specialist

Office: Montgomery County School Board, 850 N. Washington Street

Telephone: 762-5000, Extension 395

**National Bureau of Standards, Washington, D.C. 20234**

Registrar: Mrs. Virginia Maxwell

Office: Room 102, The Manse, Connecticut Avenue and Van Ness Street, N.W.

Telephone: 362-4040, Extension 366 or 7400

Field Representative for the University: John H. McCalla

Telephone: 676-7024

Length of Courses: Fifteen weeks

Open to all employees of the National Bureau of Standards—also to all employees of other government agencies and to all American citizens, providing they meet the formal prerequisites

**National Naval Medical Center, Bethesda, Md. 20014**

Educational Services Officer: Lt. (j.g.) B.K. Bingman, USN

Office: Room 32, Building 7

Telephone: 497-4585

Field Representative for the University: John H. McCalla

Telephone: 676-7024

Length of Courses: Fifteen weeks

Open to military and civilian personnel of the Navy, employees of the National Institutes of Health, and to other government employees by permission of the

Commanding Officer of the National Naval Medical Center

**National Science Foundation, Washington, D.C. 20550**

Training Officer: Herbert L. Morris

Office: 1800 G Street, N.W.

Telephone: 343-7753

Field Representative for the University, Robert W. Stewart, Jr.

Telephone: 676-7018

Length of Courses: Fifteen weeks

Open to all government employees by permission of the National Science Foundation



**National Security Agency, Fort Meade, Md. 20755**

Education Director: Miss Kathleen DeGrange, Administration

Office: Building 1C190

Telephone: 688-7047

Field Representative for the University: John F. Lobuts

Telephone: 676-7015

Academic Counselors: Mrs. Stet Tasker, Mrs. Violet Kilmon

Office: Building 1C190

Telephone: 688-6364

Length of Courses: Fifteen weeks

Open only to NSA employees

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**National War College, Fort McNair, Washington, D.C. 20315**

Project Officer: Col. Vernon K. Cammack, USAF

Office: Room 139, National War College

Telephone: 695-8404

Director for the University: Robert C. Burns

Telephone: 676-7049

Type of Course Offered: Graduate program leading to the degree of Master of Science in International Affairs

Length of Courses: Twelve weeks

Open to students and faculty of the National War College

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**Naval Oceanographic Office, Suitland, Md. 20390**

Education Directors: Bernard D. Janowski, Director; Edmund J. Klukowski, Employee Development Officer

Office: Room G-126, Building FOB 3

Telephone: Area code 301, 763-1441

Field Representative for the University: John H. McCalla

Telephone: 676-7024

Type of Course Offered: Undergraduate programs leading to the degrees of Bachelor of Science in General Studies and Bachelor of Science in Geodetic and Cartographic Science

Length of Courses: Fifteen weeks

Open to military and civilian personnel of the Navy, employees of the Census Bureau; others may obtain permission to attend by calling the Education and Training Office, 440-2592

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**Naval Ordnance Station, Indian Head, Md. 20640**

Education Director: Dominic C. Bizier; Joseph S. Sullivan, Career Guidance Counselor

Office: Industrial Relations Office, Room 3, Building D-325

Telephone: Area code 301, 743-5511, Extension 280 or 480

Field Representative for the University: John H. McCalla

Telephone: 676-7024

Length of Courses: Fifteen weeks

Open to military and civilian personnel of the Navy and to other government employees and civilians, by permission of the Commanding Officer of the Naval Ordnance Station



**Naval Research Laboratory, Washington, D.C. 20390**

Education Directors: William J. McLaughlin, Head, Training Branch; Carl Reinhardt, Head, Science Education Section

Office: Rooms 102 and 113, Building 43, 4555 Overlook Avenue, S.W.

Telephone: 574-1856 or 574-1858

Field Representative for the University: John H. McCalla

Telephone: 676-7024

Length of Courses: Fifteen weeks

Open to military and civilian personnel of the Navy at the Naval Research Laboratory and other government employees, by permission of the Director, Naval Research Laboratory

**Naval Ship Research and Development Center (Annapolis Division), Annapolis, Md. 21402**

Education Directors: Price Mosher, Director; Dan Mackie, Employee Development Officer

Office: Training Center, Building 42

Telephone: Area code 301, 268-7711, Extension 8210

Field Representative for the University: John F. Lobuts

Telephone: 676-7015

Length of Courses: Fifteen weeks

Open to military and civilian personnel of the Navy and to other government employees and civilians, by permission of the Commanding Officer

**Naval Ship Research and Development Center, Carderock, Md. 20007**

Education Director: Lorick F. Fox, Head, Training Division

Office: Room 226, Building 121

Telephone: 995-1501

Field Representative for the University: John H. McCalla

Telephone: 676-7024

Length of Courses: Fifteen weeks

Open to military personnel and civilian employees of the Naval Ship Research and Development Center and to other government employees, by permission of the Commanding Officer of the installation

**Naval Supply Center, Norfolk, Va. 23511**

Education Director: Mrs. Mary K. Lawson, Director, Industrial Relations Department

Office: Building W-143

Telephone: Area code 703, 444-2144 or 444-4912

Director for the University at The George Washington University Center (Tidewater Area), Fort Monroe, Va.; Robert C. Sedwick

Office: Building T-181

Telephone: Area code 703, 727-3363 or 727-3770

Length of Courses: Fifteen weeks

Open to military and civilian personnel of the Navy and to other government employees, by permission of the Commanding Officer

**Naval War College, Newport, R.I. 02840**

Project Officer: Cdr. Delbert D. Grantham, USN

Office: Room 116, Luce Hall

Telephone: Area code 401, 841-3021



Acting Director for the University at Newport: Clyde B. Sargent

Office: Room 361, Pringle Hall

Telephone: Area code 401, 847-2629

Type of Course Offered: Graduate program leading to the degree of Master of Science in International Affairs

Length of Courses: Nine weeks

Open to faculty and students of the Naval War College

### Patent Office, Washington, D.C. 20231

\*MEMBER OF FEDERAL TRIANGLE EDUCATIONAL ASSOCIATION

Education Director: Willis Hokans, Employee Development Officer

Office: Room 6629, Commerce Department Building, 14th Street and Constitution Avenue, N.W.

Telephone: 967-2871

Field Representative for the University: Robert W. Stewart, Jr.

Telephone: 676-7018

Length of Courses: Fifteen weeks

Open to employees of the Department of Commerce and to personnel of other government agencies by permission

### The Pentagon, Washington, D.C. 20310

Director of the Pentagon Education Center, Chairman of the Education and Training Advisory Council, and Education Officer for the U.S. Army: Philip F. Strauss

Assistant to the Director: George L. Bowman

Office: Room 3C147

Telephone: 697-2823 or 697-6805 or 697-8015

Field Representative for the University: Alvin R. Glafka

Pentagon Desk: Reception Center on the Concourse

Telephone: 697-3141

University Telephone: 676-7064

Education Office U.S. Air Force

Assistant Director: John Petroutsas

Office: Room 5E410

Telephone: 697-1863 or 697-7074

Length of Courses: Fifteen weeks in fall and spring semesters; seven and one-half weeks in summer sessions

Open only to active duty military personnel and Department of Defense civilians

### Post Office Department, Washington, D.C. 20260

\*MEMBER OF FEDERAL TRIANGLE EDUCATIONAL ASSOCIATION

Education Directors: F.L. Royer, Mrs. Jeanne Hoag, Employee Development Officers  
Office: Room 3140, New Post Office Building, 12th Street and Pennsylvania Avenue, N.W.

Telephone: 961-8545

Field Representative for the University, Robert W. Stewart, Jr.

Telephone: 676-7018

\* An organization of Federal Agencies situated in the Federal Triangle Area of downtown Washington, D.C.



Length of Courses: Fifteen weeks  
 Open to employees of the Post Office Department and to personnel of other government agencies by permission

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**Prince Georges County Public Schools, Upper Marlboro, Md. 20870**

Edward S. Beach, Jr., Director of Curriculum  
 Office: Prince Georges County School Board  
 Telephone: 627-4800

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**St. Mary's County Public Schools, Leonardtown, Md. 20650**

Robert S. King, Jr., Superintendent of Schools; James Ogdon, Supervisor of Instruction  
 Office: St. Mary's County School Board School of Health Building  
 Telephone: Area code 301, GREENWOOD 5-9141

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**Social Security Administration**

**BUREAU OF OLD AGE AND SURVIVORS INSURANCE, BALTIMORE, MD. 21235**

Education Director: William B. Wiley, Chief, Educational Facilities Branch  
 Office: Room 1B-20 Operations Building  
 Telephone: Area code 301, 944-5000, Extension 5396  
 Field Representative for the University: John F. Lobuts  
 Telephone: 676-7015  
 Length of Courses: Fifteen weeks  
 Open to employees of the Social Security Administration and to personnel of other governmental agencies by permission

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**Tidewater Area, Va. (see Fort Monroe)**

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**U.S. Marine Corps Schools, Quantico, Va. 20390**

Education Officer: 1st Lt. Sharyll A.B. Plato, USMC  
 Office: Education Office, Special Services Building, Little Hall  
 Telephone: Quantico 1000, Extension 26749  
 Field Representative for the University: Michael G. O'Connor  
 Telephone: 676-7023  
 Length of Courses: Fifteen weeks in fall and spring semesters; seven and one-half weeks in summer sessions  
 Open to military personnel and their dependents and civilian personnel attached to the Marine Corps Schools

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**U.S. Naval Academy, Annapolis, Md. 21402**

Coordinator for the Academy: William W. Jeffries, Senior Professor of English, History and Government Department  
 Office: Maury Hall  
 Telephone: Area code 301, 268-7711, Extension 642  
 Field Representative for the University: John F. Lobuts  
 Telephone: 676-7015



Length of Courses: Fifteen weeks in fall and spring semesters; seven and one-half weeks in summer sessions  
Open to military and civilian personnel attached to the Academy and other personnel, by permission of the Naval Academy

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**U.S. Naval School of Hospital Administration, Bethesda, Md. 20014**

Commanding Officer: Capt. E.L. Van Landingham, Jr., MSC, USN  
Academic Director: LCdr. William E. McConville, MSC, USN  
Office: Room 131, Building 141  
Telephone: 497-7213

Field Representative for the University: Earl J. Ross  
Telephone: 676-7040

Length of Courses: Fifteen weeks

Open to military personnel assigned to duty under instruction at the U.S. Naval School of Hospital Administration

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**U.S. Naval Station (see Washington Navy Yard)**

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**Veterans Administration, Washington, D.C. 20421**

Education Directors: Raymond L. Butler, Chief, Employee Relations and Training Division; Philip L. Loomis, After-hours Training Coordinator  
Office: Room 115, Veterans Administration Main Building, Vermont Avenue and H Street, N.W.  
Telephone: 389-3101

Field Representative for the University, Robert W. Stewart, Jr.  
Telephone: 676-7018

Length of Courses: Fifteen weeks

Open to employees of the Veterans Administration and to personnel of other government agencies by permission

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**Washington Navy Yard, Washington, D.C. 20390**

Education Director: William Mackey, Supervisory Training Officer  
Office: Second Floor, Building 172, M at 8th Street, S.E.  
Telephone: 698-3160 or 698-3188

Field Representative for the University: John H. McCalla  
Telephone: 676-7024

Length of Courses: Fifteen weeks

Open to military and civilian personnel of the Navy and to other government employees, by permission of the Commanding Officer



## COURSES OF INSTRUCTION

ON THE FOLLOWING PAGES of this CATALOGUE, under the alphabetically arranged names of the departments of instruction, are listed the courses of instruction offered by the College of General Studies required in degree programs. The courses as here listed are subject to some slight change. The University reserves the right to withdraw any course announced.

Courses are scheduled in cooperation with Installation Education Directors of the various groups, organizations, agencies, and installations interested in conducting an Off-Campus program of college courses.

### EXPLANATION OF COURSE NUMBERS

Courses are assigned dual numbers. The first is a serial number assigned by the College of General Studies at the time of the registration. The serial number does not appear in this catalogue and is used to distinguish one class from another when the same course is offered simultaneously at different places. The second number is the course number assigned by the department and indicates the academic level of each course, as follows:

*First-group courses.*—Courses numbered from 1 to 100 are planned for students in the freshman and sophomore years. With the approval of the adviser and the dean, they may also be taken by juniors and seniors. In certain instances, they may be taken by graduate students to make up undergraduate deficiencies or as prerequisite to advanced courses, but they may not be credited toward a higher degree.

*Second-group courses.*—Courses numbered from 101 to 200 are planned for students in the junior and senior years. They may be credited toward higher degrees only when registration for graduate credit has been approved at the beginning of the course by the dean responsible for the graduate work and by the instructor and when the completion of additional work has been certified by the instructor.

*Third-group courses.*—Courses numbered above 200 are planned primarily for graduate students. They are open, with the approval of the instructor, to qualified seniors; they are not open to other undergraduates.

### SEMESTER HOURS OF CREDIT

The number of semester hours of credit given for the satisfactory completion of a course is, in most cases, indicated in parentheses after the name of the



course. Thus, a year course giving 3 hours of credit each semester is marked (3-3), and a semester course giving 3 hours of credit is marked (3). A semester hour usually consists of the completion of one fifty-minute period of class work or of one laboratory period a week for one semester.

## Accounting

*Chairman:* E.J.B. Lewis, Professor of Accounting; Government 100, Telephone: 676-6055

### 1-2 Introductory Accounting (3-3)

Preparation, uses, and limitations of financial reports. *First half:* fundamentals of data accumulation and processing. *Second half:* introduction to managerial accounting—financial programming, cost determination, and analysis of financial statements. Accounting 1 is prerequisite to Accounting 2.

### 101 Cost Accounting (3)

Theory and purposes of industrial cost accounting, systems of cost control and determination, analysis and interpretation of cost data. Prerequisite: Accounting 1-2.

### 111 Financial Statement Analysis (3)

Methods and techniques of preparing, analyzing, and interpreting financial statements for the guidance of operating executives, directors, stockholders, and creditors. Prerequisite: 6 semester hours of accounting or permission of instructor.

### 115 Survey of Accounting (3)

Preparation, uses, and limitations of financial information in the management process. Not open for credit to accounting majors.

### 121-22 Intermediate Accounting (3-3)

*First half:* accounting for assets and liabilities. Prerequisite: Accounting 1-2 or permission of instructor. *Second half:* partnership, corporation, consignment, and installment-sales accounting. Prerequisite: Accounting 121 or permission of instructor.

### 141 Governmental Accounting (3)

Appropriation, encumbrance, and fund accounting for governmental and institutional entities. Prerequisite: Accounting 1-2 or permission of instructor.

### 144 Federal Accounting (3)

Accounting procedures in the Federal Government, with emphasis on agency-level accounts and accounting support for cost-based budgets. Prerequisite: Accounting 141 or permission of instructor.

### 161 Federal Income Taxation (3)

Federal income tax concepts applicable to individuals and corporations, differences between tax accounting and financial accounting, social security taxes. Prerequisite: Accounting 1-2 or permission of instructor.



**171 Auditing (3)**

Duties and responsibilities of auditors: principles and procedures of making audits, techniques of verifying financial statement items, preparation of audit working papers and reports. Prerequisite: Accounting 121-22.

**181 Accounting Systems (3)**

Theory and procedure of designing and installing systems for collecting, recording, analyzing, and presenting accounting and other business data. Prerequisite: Accounting 101, 121-22, and 171, or permission of instructor.

**191 Advanced Accounting (3)**

Consolidated statements, statement of affairs, realization and liquidation reports, and estate and trust accounting. Prerequisite: Accounting 121-22.

**193 Business Budgeting (3)**

Principles, techniques, and procedures involved in the development, installation, and operation of a system of budgetary control to aid in management of commercial and industrial organizations. Prerequisite: Accounting 1-2.

**215 Survey of Managerial Accounting (2 or 3)**

Nature, preparation, analysis, and interpretation of accounting reports; cost accounting, business budgeting, and internal accounting controls and their use in the management process. Prerequisite: Accounting 1-2 or 115 or permission of instructor.

**231 Contemporary Accounting Theory (3)**

Advanced accounting principles and concepts and recent theories concerned with the valuation and amortization of assets and determination of income. Prerequisite: 6 semester hours of accounting and permission of instructor.

**276 Management Planning and Control (3)**

Theories and techniques of cost accounting and budgetary planning and control, with emphasis on: the relation of planning and control systems to corporate and departmental objectives, control of decentralized operations and discretionary costs, long-range planning and control. Prerequisite: Accounting 101 and Business Administration 102 or Business and Public Administration 201, or permission of instructor.

## Anthropology\*

Chairman: P.F. Gallagher, Professor of Anthropology; X-10, Telephone: 676-6075

**1-2 Introductory Anthropology (3-3)**

*First half:* survey of man's origin, physical evolution, and culture history.  
*Second half:* a survey of the world's cultures, illustrating the principles of cultural behavior.

\* Anthropology 1-2 is prerequisite to all other courses in Anthropology.



## Art

Chairman: L.P. Leite, Professor of Art; Stuart 103, Telephone: 676-6666

### 1 Art Appreciation (3)

Language and function of art in its various media; development of styles, aesthetic principles, theories, and the ideas in art through the ages. Primarily for nonmajors.

### 31-32 Survey of Western Art (3-3)

Survey of the arts in the Western World from prehistoric to modern times. A foundation for further study in the history of art.

### 71-72 Introduction to the Arts in America (3-3)

Painting, sculpture, and architecture of America, with selected references to the crafts and popular arts. *First half:* from Colonial beginnings to the Republican Age. *Second half:* from early 19th century to the present.

### 100 Masterpieces of European Art (3)

Study of the Great Masters and the more important artistic movements, based upon direct observation of the major works of European painting, sculpture, and architecture. Lectures and conducted tours in galleries, museums, and palaces in London, Paris, Florence, Rome, and Madrid with appropriate visits to other nearby points of artistic interest.

### 110 Contemporary Art (3)

Painting and sculpture in 20th century Europe.

## Biological Sciences

Chairman: I.B. Hansen, Professor of Zoology; Bell 301, Telephone: 676-6090

### BIOLOGY

#### 1-2 Introductory Biology (4-4) (Campus Course)

Lecture (3 hours), laboratory (3 hours). Introductory course leading to all second- and third-group courses in biology, botany, and zoology; also provides the nonscience student with an understanding of the life sciences. Material fee, \$10 a semester.

## Business Administration

Chairman: H.R. Page, Associate Professor of Business Administration; Government 201, Telephone: 676-6115

### 51 Introduction to Business (3)

The business environment; its effects upon the decision-making process.

### 102 Fundamentals of Management (3)

Planning, organizing, directing, coordinating, and controlling activities of the administrative unit; evolution of management thinking.



- 103 Institutional Management (3)**  
Philosophy of hospital administration: special services, food service, maintenance, internal review.
- 105 Personnel Management (3)**  
The labor force and labor markets. Industrial personnel and manpower programs, organizations and policy in personnel activities.
- 106 Problems in Personnel Management (3)**  
Principles and problems of personnel management and industrial relations illustrated by cases drawn from industry and government. Prerequisite: Business Administration 105.
- 107 Collective Bargaining (3)**  
Characteristics of American unionism and collective bargaining; economic, social, and public policy considerations. Management's role in the negotiation and administration of collective bargaining agreements.
- 109 Office Management (3)**  
Organization and management of the office, office and information systems, planning and execution of work, systems analysis, supervision problems.
- 111-12 Personnel Records Administration (3-3)**  
*First half:* basic principles, techniques, and methods used in collecting, processing, evaluating, and storing personnel records of all kinds. *Second half:* problems and cases in special kinds of records keeping and records administration.
- 113 Real Estate (3)**  
Fundamentals of real estate practice; leasing and property management; valuation, financing, and taxation.
- 118 Introduction to Data Processing (3)**  
Basic principles and methods of data processing. Introduction to fundamentals, potentials, and problems of automatic data processing for management information systems.
- 119 Data Processing Programming (3)**  
Basic principles and methods of computer programming. Introduction to computer programming concepts; form and character of instructions and programming schema for leading types of digital electronic computers. Prerequisite: Business Administration 118 or permission of instructor.
- 120 Data Processing Systems (3)**  
Basic principles and methods of data systems analysis, design, and implementation. Emphasis on relationship between equipment systems and management information systems. Prerequisite: Business Administration 118 or permission of instructor.
- 121 Fundamentals of Insurance (3) (Campus Course)**  
*(Formerly Property and Casualty Insurance)*  
A general course in underlying principles of property, life, marine, and casualty insurance, and the function of insurance in the economic life of a business or individual.



**122 Life Insurance and Estate Planning (3)**

Life insurance contracts, their use in providing protection and estate development.

**131 Business Finance (3)**

Basic principles involved in the financing of business enterprises. Prerequisite: Accounting 1-2.

**132 International Business Finance (3) (Campus Course)**

Introduction to principles, problems, practices, and institutions of international finance. Emphasis on documents and procedures used in international transactions, international financial markets, rates of exchange and balance of payments, and interregional and international aspects of foreign exchange.

**136 Credit Management (3) (Campus Course)**

Types and sources of credit information, credit relationships from the standpoint of the commercial bank and the commercial business enterprise. Prerequisite: Accounting 1-2.

**138 Investments (3)**

Analysis of factors of investment credit with application to different types of investments, proper selection of investments for various classes of investors, regulation. Prerequisite: Accounting 1-2, Business Administration 131.

**141 Basic Marketing Management (3)**

Introduction to marketing and marketing management in relation to our total economy and business management, consumer and demand analysis, retailing, wholesaling, major marketing management problems and policies with particular emphasis on major decision areas and tools. Prerequisite: Economics 1-2.

**143 Marketing Research (3)**

Principles and practices of marketing research with particular emphasis on basic methods and techniques, sources and interpretation of data, and presentation of results.

**144 International Marketing Management (3) (Campus Course)**

Introductory course; analysis of the international marketing position of the United States, channels for international marketing, international advertising media, legal aspects of international marketing, methods of preparing foreign market surveys, development of policies.

**145 Sales Management (3) (Campus Course)**

Organization of sales department, sales planning and forecasting, quotas, territories, performance standards, and analysis and control of distribution costs. Prerequisite: Business Administration 141.

**147 Advertising (3)**

Advertising as a function of marketing and merchandising; uses and limitations of advertising as a tool of management; fundamentals involved in getting a finished advertisement before potential customers; evaluation, criticism, and control of advertising.



- 158 **Physical Distribution Management (3)**  
Distribution from shipper's point of view: problems of plant location, inventory control, warehousing; traffic management emphasized, including private carriage.
- 161 **Commercial Law: Contracts, Sales, Agency, and Bailments (3)**
- 162 **Commercial Law: Negotiable Instruments, Property, Mortgages (3)**
- 163 **Law in Relation to the Form of Business Units: Corporations, Partnerships, and Trusts (3)**
- 171 **Principles of Transportation (3)**  
Impact of intercity transportation systems on society. Emphasis on modal differences in development, economic characteristics, and regulation.
- 172 **Public Utilities (3) (Campus Course)**  
Legal and economic meaning of public utility concept; development, services, economic characteristics, rate making, and regulation of utility industries, with emphasis on electric, gas, and telephone industries.
- 173 **Transportation Systems Management (3)**  
Comparative study, from the standpoint of various carrier modes, of management problems common to all modes of domestic and international transportation.
- 174 **Urban Transportation (3) (Campus Course)**  
Problems of developing balanced transportation systems for urban areas—area needs, modal evaluation, cost effectiveness, finance, and marketing.
- 175 **Introduction to Foreign Trade (3) (Campus Course)**  
Terminology, trade usages and practices, conditions essential to successful trading, economic bases of international trade, obstacles to trade, tariffs, impact of governmental controls on private trade. Prerequisite: Economics 1-2.
- 176 **International Business Theory and Policy (3) (Campus Course)**  
Causal relationships underlying international business transactions, role of government in international trade, international agreements between private producers, trade with developing nations, developing international business policy.
- 177 **Foreign Markets (3) (Campus Course)**  
Patterns of world trade by countries and commodities, selected regional analysis, and in-depth market studies. Prerequisite: Business Administration 144 and 175 or permission of the instructor.
- 178 **Management of International Business Operations (3) (Campus Course)**  
Analysis of overseas projects according to purpose and type of organization; case studies involving development and management of overseas marketing programs and other operations in different world areas.
- 181 **Manufacturing Production (3)**  
Basic principles and methods of manufacturing production. Manufacturing facilities, plant and equipment. Illustrations selected from various process and fabrication industries.



**191 Business Reports and Analyses (3)**

Sources of management information, array and analysis of data, interpretation of presentation of findings.

**193 Management Communication (3)**

Survey of communication problems; written communication; style and format; oral communication; oral briefing and presentation; group leadership; rapid reading; completed staff work; related subjects.

**195 Controllership (3) (Campus Course)**

Duties and responsibilities of the controller in a business organization; relations of controller to other departments and regulatory bodies; the controller's relation to price setting and inventories, depreciation policies, internal auditing, expense control and budgeting; financial reports to management, stockholders, and employees. Prerequisite: Accounting 1-2.

**198 Case Problems in Management (3)**

Principles and techniques of management illustrated by cases drawn from business and industry. Prerequisite: Business Administration 102, 105, 131, 141.

**199-200 Research (3-3)****208 Personnel Management and Industrial Relations (3)**  
*(Formerly Business Administration 211)*

Survey of personnel management practices and procedures, including labor-management relations.

**209 Seminar: Personnel Management (3)**

Discussion of industrial personnel and manpower management, and research in advanced problems.

**210 The Personnel Manager (3)**

The personnel manager and his place in the organization, relations of personnel manager to other executives, personnel manager's policy role and relations with chief executive. Key problems of the senior personnel executive.

**212 Unionism and Collective Bargaining (3)**

The American labor movement. Collective bargaining and the conduct of labor relations under collective bargaining agreements.

**213 Current Issues in Unionism, Collective Bargaining, and Labor Relations (3)**

Current problems and issues.

**235 Financial Management (2 or 3)**

For students in specially designed programs.

**237 Investment Analysis (3)**

Advanced course in applications of investment principles and analytical techniques to the selection of investments. Prerequisite: Business Administration 138.



- 241 Advanced Marketing Management (2 or 3)**  
Marketing management problems and policies in major decision areas of product planning, channels of distribution, advertising, personal selling, sales promotion, pricing, and development of integrated marketing programs. Tools useful in decision making. Case analysis.
- 242 Seminar: Marketing Theory (3)**  
Critical review of the development of marketing thought and important marketing literature. Special and current problems and/or trends in marketing and their impact on the firm and society. Prerequisite: Business Administration 241.
- 250 Procurement and Contracting (3)**  
Business and governmental procurement and contract management.
- 251 Retail Management (3)**  
Managerial problems and policies concerning financing, location, organization structure, merchandise policies, advertising and sales promotion, personnel management, operating and service policies, accounting and control, and other related retail management problems. Case analysis.
- 261 Business Economics I (3) (Campus Course)**  
Applications in economic analysis. Uses economic theory and statistics for establishment of criteria for business decisions involving policies on profits, prices, production, investments, and inventories. Prerequisite: Economics 217, Business and Public Administration 203, and Statistics 111, 112; or equivalent; or consent of instructor.
- 262 Business Economics II (3) (Campus Course)**  
Utilizes statistical techniques and aggregate economics for appraising economic forecasts and making business forecasts. Prerequisite: Economics 218, Business and Public Administration 203, and Statistics 111, 112; or the equivalent; or consent of instructor.
- 291 Seminar: Business Management (3)**  
Research on various phases of management as practiced in American industry.
- 293 Business Research (3)**  
May be repeated once for credit.
- 296 Seminar: Controllership (3)**  
Advanced problems of financial management.
- 297 Case Studies in Business Administration (2 or 3)**  
Problems of management analyzed with the view of developing a practical solution; cases used to show problems in marketing, industrial management, finance, etc.
- 299 Thesis Seminar (3)**  
Examination of thesis standards, research philosophy and methodology.
- 300 Thesis Research (3)**



## **Business and Public Administration\***

*Chairman:* H.R. Page, Associate Professor of Business Administration; Government 201, Telephone: 676-6115

### **201 Advanced Administrative Management (3)**

Advanced course in administration emphasizing principles and practices common to administrative units of all kinds.

### **203 Mathematics for Management (0)**

Mathematical background for quantitative techniques employed in the solution of management problems. Basic analytical geometry, functions, elements of differential and integral calculus, difference equations, probability. Business and Public Administration 203 or equivalent is prerequisite to Business Administration 261, 262, and Business and Public Administration 204. No academic credit. Tuition fee, at the rate of 3 semester hours.

### **204 Quantitative Factors in Administration (3)**

Introduction to the spectrum of quantitative techniques useful in the solution of management problems. Potentials and limitations of mathematical models and proper areas for their application. Topics include statistical decision theory; linear programming; waiting line, inventory replacement models. Prerequisite: Business and Public Administration 203 or equivalent, or permission of instructor.

### **207 Human Behavior in Organizations (3)**

*(Formerly Human Factors in Administration)*

Individual, group, intergroup, and other human behavior and development; application of social science research to administration. Practical applications emphasized.

### **208 Current Issues in Organizational Behavior (3)**

Study of behavioral factors relating to issues such as automation, ethics, labor-management relations, and similar problems. Problems in behavioral science research. Prerequisite: Business and Public Administration 207.

### **211 Leadership and Executive Performance (3)**

*(Replaces former Business Administration 288 Executive Leadership)*

Theories of managerial leadership; issues and problems associated with leadership in large organizations and at higher management levels; executive selection and development. Not open for credit to students who have taken former Business Administration 288.

### **218 Survey of Data Processing (3)**

Modern data processing systems; emphasis on management problems associated with the installation and use of such systems.

### **219 Digital Computer Programming Concepts (3)**

Machine functions and programmed control, instructions and programs, sub-routines, general purpose programming, business oriented programming languages. Prerequisite: Business and Public Administration 204 or permission of instructor.

\* Administered by the Department of Business Administration.



- 220 Comparative Digital Computer Systems and Their Management (3)**  
Properties and capacities of the range of data processing equipments in use today, special purpose equipments in business, recent and prospective equipment developments. Fundamentals of data processing installation management. Prerequisite: Business and Public Administration 218 or 219, or permission of instructor.
- 221 Management Information Systems Development and Application (3)**  
Analysis and design of management information systems, integration of data processing in operations of government or business, impact on management organization and decision making. Prerequisite: Business and Public Administration 218 or 219, or permission of instructor.
- 222 Seminar: Advanced Digital Computer Concepts (3)**  
Study of advanced problems in the design and application of computer systems.
- 223 Management of a Data Processing Organization (3)**  
Organization and management of data processing function in business and government; study of types of resources required; planning, scheduling, and production of data processing workloads; performance standards; evaluation criteria. Prerequisite: Business and Public Administration 218 and either 219 or 220.
- 227 Mathematical Programming: Techniques and Applications (3)**  
Technical and management considerations of linear and nonlinear programming. Mathematical and computational aspects of linear programming. Formulation of linear programming models. Studies of applications of linear programming. Introduction to theory and application of nonlinear programming. Prerequisite: Business and Public Administration 204.
- 228 Applications of Operations Research (3)**  
Applications of operations research in a number of management problem areas in government and business. Critical review of areas where model-building is promising and areas not amenable to operations research techniques. Student formulation of models. Prerequisite: Business and Public Administration 204.
- 263 Organization and Management (3)**  
Contemporary management theory, emphasizing the application of management concepts in organizational practice. Comparative studies of current organizational designs and management processes.
- 268 Management Engineering (3)**  
Analysis of the techniques for initiation and implementation of management engineering programs; emphasis on organization and methods surveys including the study of work measurement, work simplification, management audits, and other management improvement programs. Not open to students who have taken Business and Public Administration 269.
- 269 Management and Information Systems (3)**  
Survey of collection and processing of management information, management engineering, work simplification, development of methods, procedures, and systems; systems analysis. Not open to students who have taken Business and Public Administration 268.



**\*280-81 Managerial Aspects of National Security (3 or 4-3 or 4-3)**  
-82

The application of business management principles to the military aspects of national security; organization and administration of the Federal Government for national defense; management of national resources (natural, human, energy, economic); budgeting and controllership; determination of requirements; procurement; production; supply management; and communications.

**287 Relations of Government to Business (3)**

Activities of government in relation to business management in areas of labor relations, wages, production, and prices. Trend and change in economic activity and its bearing upon government policy.

**295 Research Methods (3)**

Research techniques, sources of information, array and analysis of data, interpretation and presentation of the findings.

## Chemistry

*Chairman:* C.R. Naeser, Professor of Chemistry; Samson 211, Telephone: 676-6120

**3-4 Fundamentals of Physical Science (4-4) (Campus Course)**

A year course: credit given on completion of Chemistry 4. Lecture (3 hours), laboratory (3 hours). Selected topics from chemistry, physics, astronomy, and geology are integrated to introduce the nonscience major to the basic methods and achievements of physical science. Laboratory fee, \$11 a semester.

**11-12 General Chemistry (4-4) (Campus Course)**

A year course: credit given on completion of Chemistry 12. Lecture (3 hours), laboratory (3 hours), recitation (1 hour). Elementary course in general chemistry, including qualitative analysis. Prerequisite: one year of high school algebra. Laboratory fee, \$18 a semester.

## Chinese (Mandarin)<sup>†</sup>

*Chairman:* Helen Yakobson, Professor of Russian; GG-10, Telephone: 676-6335

**1-2 First-year Chinese (3-3) (Campus Course)**

A year course: credit given on completion of Chinese 2. For beginners. Pronunciation, conversation, reading, writing basic Chinese characters. Aural training, oral practice in language laboratory. Laboratory fee, \$17.50 a semester.

\* Available only to students in the Master of Science in Business Administration and Master of Science in Public Administration programs at the Industrial College of the Armed Forces and the Air University.

† Administered by the Department of Slavic and Oriental Languages and Literatures.



### 3-4 Second-year Chinese (3-3) (Campus Course)

A year course: credit given on completion of Chinese 4. Continuation of grammar and spoken Chinese, more emphasis on the written language, reading, writing commonly used Chinese characters, reading selected writings. Aural training, oral practice in language laboratory. Laboratory fee, \$17.50 a semester. Prerequisite: Chinese 1-2 or equivalent.

## Economics

*Chairman:* C.E. Galbreath, Professor of International Economics; Monroe 401, Telephone: 676-6150

### \*1-2 Principles of Economics (3-3)

Lecture (2 hours), recitation (1 hour). Survey of the major economic principles, institutions, and problems in contemporary life. Economics 1 is prerequisite to Economics 2.

### 101 Intermediate Microeconomic Theory (3)

(Formerly *Economic Analysis*)

Analysis of supply, demand, and pricing.

### 102 Intermediate Macroeconomic Theory (3) (Campus Course)

(Formerly *Economic Analysis*)

Theories of national income determination and growth.

### 105 Business Fluctuations and Forecasting (3) (Campus Course)

(Formerly *Business Cycles*)

Description and analysis of the facts of economic instability, survey of recent business cycle theory, forecasting, and consideration of countercyclical policies.

### 121-22 Money and Banking (3-3)

Theory of money, credit, and banking; commercial banking and the Federal Reserve System; other financial institutions; international aspects of money; current financial problems.

### 161-62 Public Finance (3-3)

Theoretical and institutional analysis of government expenditures, taxation, fiscal policy, and debt management.

### 165 Government and Business (3) (Campus Course)

(Formerly *Economic Policy*)

Survey of economic policies in the United States, economic philosophies, antitrust and other areas of regulation.

### †179-80 U.S. Economic History (3-3) (Campus Course)

Process of economic growth from Colonial times to the present. Development of various sectors in the economy—such as agriculture, transportation, manufacturing, and banking—and their interdependence. *First half:* 1607-1865. *Second half:* 1865 to present.

\* Economics 1-2 is prerequisite to all other courses in Economics.

† Interdepartmental course offered by departments of Economics and History. Students register in either department.



**181-82 International Economics (3-3)**

*First half:* fundamentals of the monetary theory and price theory of international trade. *Second half:* analysis of major contemporary problems including balance of payments, international liquidity, and economic development.

**217-18 Survey of Economics (2 or 3-3)**

For graduate students in fields other than economics. *First half:* price theory. *Second half:* income and employment theory. Not open to graduate students in economics.

**251-52 Economic Development (3-3)**

Theories and problems of economic growth; special attention to the underdeveloped countries.

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**Education**

*Chairman:* B.S. Root, Professor of Education; Stuart 300, Telephone: 676-6160

**108 Human Development, Learning, and Teaching (3)**

Lecture (2 hours), conference (1 hour), field work (2 hours). Principles of effective teaching based on an understanding of human development and the nature of learning. Prerequisite: Psychology 22.

**112 Educational Measurement (3)**

Scope, needs, services to students, selection and construction of teacher-made tests, interpretation of tests for evidence purposes. Prerequisite: Education 108 and 123.

**113 Elementary School Art (3)**

For undergraduates in the elementary school curriculum. Materials and methods. Material fee, \$5. Prerequisite: Psychology 1 and 22.

**114 Elementary School Music (3)**

For undergraduates in the elementary school curriculum. Materials and methods. Prerequisite: Psychology 1 and 22.

**115 Elementary School Teaching of Reading (3)**

Introduction to methods, techniques, materials, and activities essential to a good elementary school reading program. Prerequisite: Education 108 and 123, or teaching experience.

**116 Elementary School Social Studies (3)**

Content, methods, materials, and activities essential in the elementary school curriculum. Prerequisite: Education 108 and 123, or teaching experience.

**117 Elementary School Science (3)**

Content, methods, materials, and activities essential in the elementary school curriculum. Prerequisite: Education 108 and 123, or teaching experience.



**120 Elementary School Mathematics (3)**

Content, methods, materials, concepts of "new mathematics," and activities essential in the elementary school curriculum. Prerequisite: Education 108 and 123, or teaching experience.

**123 Society and the School (3)**

Lecture (2 hours), conference (1 hour), field work (2 hours). Historical and social development of education at local, national, and international levels; cooperation of the school with other community agencies; functions of school personnel.

**128 Children's Literature (3)**

Newer books for children and the children's classics, contribution of literature to child development, children's original expressions.

**\*138 Teaching Social Studies in Secondary Schools (3)**

Prerequisite: 24 semester hours of social studies.

**\*146 Teaching Foreign Languages (3)**

Prerequisite: 18 semester hours of one foreign language.

**\*147 Foreign Language Instruction in the Elementary School (2)**

Methods, materials, and activities essential in teaching foreign languages in the elementary school.

**†205-6 The Curriculum (3-3)**

For experienced teachers. *First half:* curriculum foundations and issues; comparison of curriculum patterns. *Second half:* curriculum development in subject areas; group consideration of student problems.

**†207 Curriculum Materials (3 to 6)**

For experienced teachers. Construction of courses of study and classroom teaching aids, with direct application to students' situations.

**208 Human Development (3)**

Contribution of various disciplines to an understanding of human development throughout the life span; emphasis on practical implications of relevant research.

**209 Child Development (3)**

Interdisciplinary approach to child development. Analysis, interpretation, and practical implications for instruction of research in disciplines contributing to a knowledge of child development.

**212 Educational Measurement (3)**

Basic measurement techniques; construction, selection, administration, and interpretation of objective and essay-type examinations; statistical analysis of test results; laboratory use of test instruments.

**213-14 History of Education (3-3)**

*First half:* European backgrounds of American education. *Second half:* evolution of the American school system.

\* Prerequisite to all special methods courses: Education 108, 123, and 131, or adequate experience.  
 † Additional prerequisites are stated under each course.  
 ‡ Prerequisite: adequate professional preparation.



**\*216 Education of Slow-learning Children (3)**

Identification, nature, and needs of slow-learning elementary and junior high school children. Emphasis on diagnosis and treatment of learning difficulties.

**\*217-18 Philosophy of Education (3-3)**

*First half:* to help students formulate a personal philosophy of education.  
*Second half:* social foundations of education—forces that shape policies and offerings of the school.

**\*219 Elementary School Classroom Procedures (3)**

Current classroom practices; emphasis on planning, unit teaching, techniques in discipline; individual and group evaluation techniques, resources for learning, providing for individual differences.

**\*221 Early Childhood Education (3)**

The philosophy and principles underlying the teaching of four- to seven-year olds. Emphasis is on organization, equipment, methods, and materials for promoting the growth needs of young children.

**\*223-24 Reading Problems (3-3)**

Elementary and secondary school reading difficulties; classroom and clinical techniques in solving reading problems. Prerequisite: one or more years of recent teaching experience.

**227 Basic Issues in Elementary Education (3)**

Identification, definition, and analysis of some of the most important problems facing the contemporary American elementary school.

**228 Instructional Areas in Elementary Education (3)**

Objectives, organization, content, and teaching methods in language arts, arithmetic, social studies, science, arts and crafts, health and physical education.

**\*229 Administration of Elementary Education (3)**

For experienced teachers and administrators. Achieving instructional objectives, organizing and servicing teaching activities, coordinating school and community life.

**\*231 Secondary School Classroom Procedures (3)**

Current classroom practices: teacher-pupil planning, group procedures, initiatory and culminating activities, individual and group evaluation techniques, teaching aids, etc.; review of recent literature.

**\*241 Education of the Gifted (3)**

For classroom teachers. Nature and discovery of giftedness, provisions for the gifted in regular classes, experimental projects.

**\*243 Human Relations in the Classroom (3)**

Principles and practices involved in interpersonal relationships between learner and teacher and among learners.

**245 School and Community (3)**

The school as an important member of a team of social agencies that builds the community.

\* Prerequisite: adequate professional preparation.



- \*251 Foundations of Guidance and Personnel Services (3)**  
*(Formerly Guidance in Elementary and Secondary Schools)*  
 Introductory survey: definitions, scope, principles, historical background, organization, services, emerging trends, and issues.

- 252 Organization and Administration of Guidance Services (3)**  
 For guidance directors, supervisors, and experienced school counselors who hope to qualify for such positions. Prerequisite: a minimum of 15 semester hours of approved graduate work in measurement and guidance.

- 253 Analysis of the Individual for Purposes of Counseling (3)**  
 Detailed study of individual analysis and appraisal techniques. Development of systematic case study. Prerequisite: Education 112 or equivalent.

- \*254 The Junior High School (3)**  
 Purposes, organization, core program, guidance, developing course of study, extra-classroom activities.

- 257 Educational and Occupational Development (3)**  
 Theories of career development; structure of education, training, and work in the United States; sources, forms, collection, evaluation, and dissemination of educational-occupational information.

- 258 Techniques of Counseling (3)**  
 Intensive study of educational and psychological processes involved in counseling interviews. Vocational, educational, and personal counseling problems. Prerequisite: 12 semester hours in testing and guidance, including Education 253 and 257. In exceptional cases Education 253 or 257 may be taken concurrently with 258.

- \*260 Secondary School Supervision (3)**  
 For experienced teachers and administrators with two or more years of teaching experience. Review of modern supervisory concepts including practices followed in the operation of the school.

- \*261-62 Practicum in Guidance (3-3)**  
 Supervised practical instruction. Prerequisite: graduate work in counseling. Admission by permission of Department Chairman.

- 263-64 Employee Training (3-3)**  
*First half:* nature and purpose, review of major programs—orientation, supervisory, apprentice, clerical skills, communication. *Second half:* administrative problems and practices, training media, coordination with other management functions. Prerequisite: adequate professional preparation or two years of experience in employee training.

- \*271 The Teacher and School Administration (3)**  
 Role of federal, state, and local administrative units; school finance; legal controls; school plant; public support; improving teaching conditions.

- \*272 The Teacher and School Supervision (3)**  
 Nature, organization, human relationships, and techniques.

\* Prerequisite: adequate professional preparation.



**\*275 School Finance (3)**

Educational financial theory, practice, and control, including methods of financing.

**\*276 Seminar: Public Relations in School Administration (3)**

Purposes, gathering materials, disseminating agencies, publicity media, public participation in policy making.

**\*278 School Law (3)**

Sources and scope of school law; legal rights and responsibilities of teachers, pupils, and taxpayers. Other legal problems of major interest to the group.

**\*285 Student Activities (3)**

Nature and purposes of selected activities—homeroom, clubs, assemblies, school publications, student council, interscholastic contest; particular attention to sponsorship, participation, finance, and evaluation.

## English†

Chairman: J.P. Reesing, Jr., Professor of English Literature; Stuart 410, Telephone: 676-6180

### ENGLISH COMPOSITION

**X Basic English (0)**

Instruction, drill, and exercises in grammar, vocabulary, spelling, and mechanics in general; instruction and exercises in composition and reading. This course is designed to prepare students for English 1. No academic credit. Tuition fee, \$84.

**†1 English Composition (3)**

Analysis and practice of expository techniques with emphasis on unity, development, and organization.

**†1x English Composition (3)**

Intensive course in English grammar and composition for students inadequately prepared for English 1. Begins with detailed instruction, drill, and exercises in basic structure of the English language and in writing paragraphs; continues with content of English 1. English 1x meets five hours a week and carries 3 semester hours of credit. Total fee, \$196 (tuition fee of \$171 plus additional fee of \$25).

**2 English Composition (3)**

Readings and practice in expository and argumentative techniques and in research procedure. Prerequisite: English 1 or 1x.

\* Prerequisite: adequate professional preparation.

† Before students are registered in English 1, they are tested in the minimum essentials of vocabulary, spelling, grammar, standard usage, and writing skill. Those students who show marked superiority may, upon passing further tests, be exempted from one or both halves of the English Composition course; those who are inadequately prepared for English 1 will be assigned to *Basic English*. In lieu of *Basic English*, Off-Campus students may, if they desire, be given permission to register for English 1x on campus. English 1 or 1x is prerequisite to all other courses in English.



**11 The Writing of Reports (3)**

Theory and practice in the writing of technical reports. Prerequisite: English 1 or 1x and 2.

**WORLD LITERATURE****41-42 Introduction to World Literature (3-3)**

*First half:* a survey of Western literary heritage from Homer to Milton. *Second half:* a review of Western literature from the English metaphysical poets to the present.

**ENGLISH LITERATURE****51-52 Introduction to English Literature (3-3)**

Historical survey. Prerequisite: English 1 or 1x.

**91-92 Introduction to European Literature (3-3)**

Consideration of various types. Prerequisite: English 1 or 1x.

**135-36 Shakespeare (3-3)****AMERICAN LITERATURE****71-72 Introduction to American Literature (3-3)**

Historical survey. *First half:* from the beginnings to the Civil War. *Second half:* from the Civil War to present. Prerequisite: English 1 or 1x.

**French\***

*Chairman:* J.A. Frey, Associate Professor of Romance Languages; A-10, Telephone: 676-6330

**1-2 First-year French (3-3)**

A year course: credit given on completion of French 2. For beginners. Pronunciation, conversation, grammar, composition, reading of modern French prose.

**3-4 Second-year French (3-3)**

A year course: credit given on completion of French 4. Conversation, grammar, composition, reading in modern French prose, introduction to French civilization. Prerequisite: French 1-2, or two years of high school French.

**51-52 Survey of French Literature and Civilization (3-3)**

Social, artistic, and cultural background of French literature. Lectures, readings, recitations, and informal discussions.

\* Administered by the Department of Romance Languages and Literatures.



## Geodetic and Cartographic Science

*Program Adviser:* Hyman Orlin, Professorial Lecturer in Mathematics; Telephone: 496-8171

### 1-2 Introduction to Cartography (3-3)

The use of maps. History of mapping. Introduction to the fundamental concepts of topography, hydrography, and cartography. Characteristics and uses of different kinds of maps and charts, symbolization, representation of relief, geographic and grid coordinates, attributes of various projections, reliability. Making maps. Fundamental concepts of geodesy and geomorphology as applied to maps and charts, surveying methods, application to aerial photography, photo interpretation, map design, compilation and reproduction.

### 12 Plane Surveying (3)

Theory and practice in measurement of distances, angles, and elevations; traversing, leveling, and triangulation; stadia surveying, plane coordinate computations, and miscellaneous surveying problems. Prerequisite: Mathematics 6 or equivalent.

### 13 Geodetic Surveying (3)

Elements of geodetic and hydrographic surveys; electronic measurements, triangulation, trilateration, and precise traverses; geodetic leveling and precise trigonometric leveling; introduction to geodetic astronomy and to least squares adjustment. Prerequisite: Geodetic and Cartographic Science 12, Mathematics 21.

### 17 Elementary Photogrammetry (3)

Fundamentals of aerial photography, photogrammetric optics and photographic processes; mathematics of vertical and tilted photographs; stereoscopy and parallax; planning and executing the photogrammetric project; radial triangulation methods; photomaps; oblique and terrestrial photography. Prerequisite: Geodetic and Cartographic Science 2, 12.

### 18 Intermediate Photogrammetry (3)

Basic photogrammetry theory and practice. Stereoscopic plotting instruments; graphical and computational methods for adjusting strips of aerial triangulation; electronic computers. Method of least squares applied to photogrammetry. Prerequisite: Geodetic and Cartographic Science 17, Mathematics 21.

### 105 Elementary Geophysics (3)

Introduction to geophysics; origin of the earth, geochronology, seismology, gravity, and geomagnetism. Prerequisite: Geology 1 or 3, Mathematics 22.

### 106 Interpretation Theory—Geophysics (3)

Development of mathematical and physical foundations for interpreting seismic, gravimetric, and magnetic data. Prerequisite: Geodetic and Cartographic Science 105, Oceanography 102, Mathematics 24.

### 107 Geomorphology (3)

Development of geomorphic concepts; the earth's crust, weathering, climate, and denudation; stream, shore, wind, and ice processes; glaciation; physiographic regions. Prerequisite: Geodetic and Cartographic Science 2.



- 108 **Climatology (3)**  
Introduction; causes for climate and weather, air mass movements, water mass movements, physical features of boundaries. Tropics, subtropics, humid and dry continentals, subarctics. Prerequisite: Geodetic and Cartographic Science 107.
- 110 **Map Projections (3)**  
Mathematics of projections; geometry of sphere and ellipsoid; distortions; conic, cylindrical, and azimuthal projections; geodetic projections. Prerequisite: Geodetic and Cartographic Science 2, 12; Mathematics 24.
- 111 **Cartographic Techniques (3)**  
Modern cartographic techniques as applied to maps and charts. Map compilation, color separation scribing for preparing map manuscripts for multi-color printing, scribing instruments and procedures, map editing, cartography for photo-image maps and map substitute products, aviation and aerospace cartography. Prerequisite: Geodetic and Cartographic Science 2, Chemistry 12.
- 112 **Advanced Cartography (3)**  
Recent cartographic practices. Prerequisite: Geodetic and Cartographic Science 111.
- 117 **Advanced Photogrammetry (3)**  
Analytic photogrammetry. Prerequisite: Geodetic and Cartographic Science 18, Mathematics 24.
- 155 **Elementary Geodesy (3)**  
Principles and formulas basic to theoretical and applied geodesy, with application to special problems; computations on an ellipsoid, gravimetry, deflection of the vertical and Laplace's equation, introduction to satellite geodesy. Prerequisite: Geodetic and Cartographic Science 13, Mathematics 23, Physics 30.
- 156 **Geodetic Astronomy (3)**  
Principles and formulas for the astronomic determination of longitude, time, azimuth, and latitude; star catalogues; observing and time recording instruments; practice in observing and computation. Prerequisite: Geodetic and Cartographic Science 155.
- 160 **Mathematics of Adjustments and Least Squares (3)**  
Types and distribution of errors, Gaussian and Poisson distributions, fundamentals of matrix algebra with special emphasis on least squares adjustment of geodetic networks. Prerequisite: Geodetic and Cartographic Science 155, Mathematics 24.
- 161 **Adjustments in Geodesy and Photogrammetry (3)**  
Advanced adjustment theory. Prerequisite: Geodetic and Cartographic Science 160.



## Geography and Regional Science

*Chairman:* P.J. Mika, Associate Professor of Geography; I-200, Telephone: 676-6185

### 51 Introduction to Geography (3)

Interrelated processes affecting the character of landforms, hydrography, soils, vegetation, and climate; relevance of their world patterns to man.

### 52 World Regions (3)

Survey of major countries, synthesis and analysis of major world regions.

### 125 Transportation Complexes (3)

World communications and transportation systems, interrelations between transportation and areal organization of man's activities.

### 126 World Economic Geography (3)

*(Formerly World Economics)*

World patterns and processes underlying the areal structure of selected economic activities.

### 127 World Population and Settlement (3)

Patterns of world population; factors contributing to population pressures, growth, and migrations.

### 146 World Political Geography (3)

Types and distributions of political systems, the major political units and associations of the world, factors which affect relative political power, areas of conflict and arbitration.

### \*151 United States and Canada (3)

*(Formerly United States)*

### \*153 Western Europe (3)

### \*155 Africa (3)

### \*161 Latin America (3)

### \*165 Asia (3)

### \*166 Soviet Union and Eastern Europe (3)

*(Formerly Soviet Union)*

### 168 Arctic Regions (3)

Human and physical aspects of the Arctic regions with respect to natural environment and potential resources, present state of development and special problems encountered. Given in cooperation with the Arctic Institute of North America.

\* Regional survey. Prerequisite: Geography 51.



## Geology

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Chairman: Geza Teleki, Professor of Geology; Bell 3, Telephone: 676-6190

### 1-2 Introductory Geology (3-3) (Campus Course)

Lecture (2 hours), laboratory and field trip (2½ hours). Survey covering the principles of geology. Laboratory fee, \$10 a semester.

### 3 Introductory Geology (3)

Survey covering the principles of geology. Nonlaboratory course for Off-Campus students only.

### 4 Introductory Geology (3)

Geological periods, evolution of life on earth. Nonlaboratory course for Off-Campus students only. Prerequisite: Geology 1 or 3, or permission of the instructor.

### 125 Marine Geology (3) (Campus Course)

Lecture and map work. Principles of oceanography and submarine geology; geology of the deep sea; topography, crustal structure, sedimentary processes, and marine environment. Prerequisite for geology majors: Geology 1-2; for students in fields other than geology, permission of instructor.

### 141 Introductory Geochemistry (3) (Campus Course)

Lecture (2 hours), laboratory as arranged. Principles and theories on the abundance, relationships, and distribution of the elements in various rock and mineral species. Prerequisite: Chemistry 11-12, Mathematics 21, Physics 1-2. Laboratory fee, \$12.

## Germanic Languages and Literatures

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Chairman: J.C. King, Professor of German; Monroe 405, Telephone: 676-6195

### 1-2 First-year German (3-3)

A year course: credit given on completion of German 2. Essentials of German grammar; translation of easy prose.

### 3-4 Second-year German (3-3)

A year course: credit given on completion of German 4. Selections from modern German prose; continuation and review of grammar. Prerequisite: German 1-2 or two years of high school German.

### 9-10 German Conversation and Composition (3-3)

### 51-52 Introduction to German Literature (3-3) (Campus Course)

Prerequisite: German 4 or the equivalent.



## Health Care Administration

*Chairman:* Leon Gintzig, Professor of Hospital Administration; CC-20, Telephone: 676-6220

### 153-54 Survey of Health Care Organization and Procedures (3-3)

Primarily for students who wish an over-all knowledge of organization and procedures used in health care policies, hospitals, and long-term care facilities. Not open to Master's candidates in Health Care Administration. Students wishing to take the course for graduate credit must take additional work.

### 209 Health Care Economics (3)

Lecture (2 hours), laboratory (2 hours). Characteristics of the consumers and providers of health care, health prepayment and insurance programs, impact of social and economic factors on the health care institution.

### 250 Administration for Mental Care (3)

Special characteristics of administration required in mental hospitals, psychiatric sections of general hospitals, mental health clinics, and others.

## History\*

*Chairman:* R.P. Sharkey, Professor of Economic History; Stuart 416, Telephone: 676-6230

### 39-40 European Civilization in Its World Context (3-3)

Primarily for freshmen. *First half:* political, social, economic, and cultural history from ancient times to 1715. *Second half:* 1715 to present. Students cannot receive credit for both History 39-40 and 91-92.

### 71-72 Civilization of the United States (3-3)

Primarily for sophomores. *First half:* political, social, economic, and cultural forces of the United States in their world setting from 1492 to 1865. *Second half:* 1865 to the present.

### 145-46 History of Russia (3-3)

Rise and revolution of Russia. *First half:* the Old Regime, 860-1900. *Second half:* Revolution and Soviet rule, 1900-1960.

### 149-50 European Diplomatic History (3-3)

The European state system; diplomatic practices and relations since the Congress of Vienna; emphasis on policies and actions of the great powers and their statesmen. *First half:* to 1890. *Second half:* since 1890. Students cannot receive credit for both History 150 and 153.

### 163-64 History of Latin America (3-3)

Political, social, and cultural development. *First half:* through independence. *Second half:* the national period.

\* History 39-40 is prerequisite to courses 109 through 152 and 187 through 196; History 71-72, to courses 170 through 184; either History 39-40 or 71-72, to courses 162 through 166.



**\*179-80 U.S. Economic History (3-3) (Campus Course)**

Process of economic growth from Colonial times to the present. Development of various sectors in the economy—such as agriculture, transportation, manufacturing, and banking—and their interdependence. *First half:* 1607-1865. *Second half:* 1865 to present.

**181-82 U.S. Diplomatic History (3-3)**

Tendencies toward isolation, expansion, and collectivism; disputes with foreign countries and their settlement; activities of American secretaries of state and diplomatic agents. *First half:* to 1898. *Second half:* since 1898.

**195-96 History of East Asia (3-3)**

Civilizations of China and Japan; emphasis on cultural development and social organization. *First half:* beginnings to about 1800. *Second half:* traditional societies on the eve of the modern era, their responses to Western cultural influences since mid-19th century.

**245-46 Research Seminar: Russian and European History (3-3)**

Prerequisite: History 145-46 or equivalent.

**281-82 Research Seminar: U.S. Diplomatic History (3-3)**

Prerequisite: History 181-82 or equivalent.

## Humanities

*Faculty Adviser:* J.H. Coberly, Professor of American Literature; Stuart 405, Telephone: 676-6630

**1-2 Humanities in the Modern World (3-3)**

Interdisciplinary study of modern Western thought from the Renaissance to the 20th century. Reading and intensive class discussion of five works each semester from the following authors: Machiavelli, Pope, Voltaire, Rousseau, Goethe, Tolstoy, J.S. Mill, Zola, Nietzsche, Kierkegaard, Freud, Kafka, Koestler, T.S. Eliot. Background lectures on the major intellectual, artistic, economic, and social movements.

**3-4 Classical Humanities (3-3)**

Interdisciplinary study of the thought of Greece and Rome. Reading and intensive class discussion of five works each semester from the following authors: Homer, Hesiod, Aristophanes, Plato, Aristotle, Aeschylus, Euripides, Sophocles, Herodotus, Thucydides, Lucretius, Marcus Aurelius, Epictetus, Polybius, St. Augustine. Background lectures on the major intellectual, artistic, economic, and social movements.

\* An interdepartmental course offered by the departments of History and Economics. Students may register in either department.



## International Affairs\*

*Faculty Adviser:* H.M. Stout, Professor of International Affairs; Maury 22, Telephone: 676-6240

### 99-100 Research (3-3)

160 Insurgency: Communist Doctrine and Its Application (3)

161 Internal Security: the Response to the Communist Insurgency (3)

162 Totalitarian Control over Populations (3)

†256 Diplomacy Between the World Wars (3)

†260 Fundamentals of National Power (3)

†261 International and U. S. Foreign Policy (3)

†262 National Security Policy of the United States (3)

†263 Intercultural Relations (3)

†287 Power Politics in the Pacific (3)

†297 Readings in International Affairs (1, 2, or 3)

†299-300 Thesis Research (3-3)

## Italian‡

*Chairman:* J.A. Frey, Associate Professor of Romance Languages; A-10, Telephone: 676-6330

### 1-2 First-year Italian (3-3)

A year course: credit given on completion of Italian 2. For beginners. Pronunciation, conversation, grammar, composition, reading of modern Italian prose.

### 3-4 Second-year Italian (3-3)

A year course: credit given on completion of Italian 4. Conversation, grammar, composition, reading in modern Italian prose, introduction to Italian civilization. Prerequisite: Italian 1-2 or two years of high school Italian.

### 51-52 Introduction to Italian Literature (3-3)

\* Administered by the School of Public and International Affairs.

† War Colleges' curricula only.

‡ Administered by the Department of Romance Languages and Literatures.



## Journalism

*Chairman:* R.C. Willson, Associate Professor of Journalism; Library 407, Telephone: 676-6225

### 145 Principles and Problems of Public Relations (3) (Campus Course)

Principles, problems, and ethics of public relations for government agencies, commercial establishments, educational and other public institutions. Case histories of successful programs.

## Latin American Civilization—Special Program

*Program Director:* R.C. Burns; F-27, Telephone: 676-7049

*Faculty Consultants:* C.E. Galbreath, Professor of International Economics; W.H. Kraus, Professor of Political Science; G.E. McSpadden, Professor of Romance Languages; Mario Rodríguez, Professor of Latin American History; H.M. Stout, Professor of International Affairs

### 101 Latin American Civilization (3)

A three-week, University-conducted study program in a selected area in Latin America, effecting a broad synthesis of history, politics, economy, geography, language, and literature in order to achieve an understanding of contemporary problems and assess national attitudes in the light of world relations. On-the-spot seminars, guest lectures at universities, instructional visits to government offices, first-hand observation of each country and the operation of its economy, comparisons and contrasts among the countries of the area.

## Mathematics\*

*Chairman:* N.D. Nelson, Professor of Mathematics; Monroe 421, Telephone: 676-6235

### 3 College Algebra (3)

Equivalent to second-year high school algebra. Prerequisite: one year each of high school algebra and high school geometry.

### 6 Plane Trigonometry (3)

Prerequisite: two years of high school algebra and one year of high school geometry, or Mathematics 3 (or concurrent registration therefor).

### 9 General Mathematics I (3)

For students electing Mathematics 9 and 10 as a terminal sequence. Numerals and numbers, number bases, mathematical systems, sets, propositional logic and truth values. Prerequisite: two years of high school mathematics.

\* No courses numbered 1 to 100 are available for college credit if the student's previous training in mathematics meets the prerequisite for a higher numbered course.  
Graduate credit may not be given for courses numbered 101 to 200 without the permission of the Chairman of the Department.



- 10 General Mathematics II (3)**  
Number systems, Euclidean and non-Euclidean geometry, graphs, functions, introduction to analytic geometry. Prerequisite: Mathematics 9.
- 15 Finite Mathematics I (3)**  
Introduction to logic, sets, and probability. Prerequisite: two years of high school mathematics.
- 16 Finite Mathematics II (3)**  
Vectors and matrices, mathematics of finance and accounting, linear programming, introduction to game theory. Prerequisite: Mathematics 15.
- 21 Calculus I (3)**  
Elementary concepts of analytic geometry. Differentiation of algebraic functions with applications. Prerequisite: Mathematics 3 and 6; or two years of high school algebra, one year of high school geometry, and one-half year of high school trigonometry; or equivalent.
- 22 Calculus II (3)**  
Differentiation and integration of transcendental functions and applications, topics in analytic geometry, techniques of integration. Prerequisite: Mathematics 21.
- 23 Calculus III (3)**  
Vector concepts, improper integrals, polar coordinates, infinite series, and solid geometry. Prerequisite: Mathematics 22.
- \*24 Calculus IV (3)**  
Multiple integration and partial differentiation with applications, line and service integrals, differential equations. Prerequisite: Mathematics 23.
- 111 Mathematics for Engineers and Physicists I (3)**  
Differential equations, linear algebra.
- 112 Mathematics for Engineers and Physicists II (3)**  
Fourier series, Laplace transformation, partial differential equations. Prerequisite: Mathematics 111.
- 124 Introduction to Matrix Theory (3)**  
Elementary theory of finite vector spaces, determinants, equivalence, matrices with polynomial elements, similarity of matrices.
- 134 Introduction to Boundary Value Problems (3)**  
Prerequisite: Mathematics 111 or 142, or the equivalent.
- 139 Advanced Calculus I (3)**  
Review and extension of elementary one-variable calculus, emphasis on the theoretical foundations. Prerequisite: Mathematics 24 or 28, or equivalent.
- 140 Advanced Calculus II (3)**  
Calculus of several variables. Prerequisite: Mathematics 139 or equivalent.
- 153 Introduction to Numerical Analysis (3)**
- 171 Vector Analysis (3)**

\* Mathematics 24 is prerequisite to all courses numbered 101-200. Exception to this regulation may be made for Mathematics 122 and 124. Students anticipating a substantial concentration in mathematics should consult with the Department about early completion of these courses.



## Oceanography\*

*Program Adviser:* Hyman Orlin, Professorial Lecturer in Mathematics; Telephone: 496-8171

### 101-2 Elementary Oceanography (3-3)

Chemical and physical properties and composition of sea water, heat budget, distribution of variables, statics, dynamics, water masses, general circulation of the oceans, underwater sound, propagation of light, submarine topography, sea floor deposits, biological classifications, and marine ecology. Spectrum of ocean waves from capillary through tidal, including internal waves. Observations and reduction; history and interrelationships between marine sciences. Prerequisite to Oceanography 101: Mathematics 21, Physics 1. Prerequisite to Oceanography 102: Geology 1 or 3.

### 110 Ocean Dynamics (3)

All aspects of physical oceanography except waves and tides. Subjects of physical and chemical properties of sea water, underwater sound, and propagation of light. Emphasis on hydrodynamic equations, statics and kinematics, currents, heat budget, turbulence, and the general circulation and water masses of oceans. Prerequisite: Mathematics 22, Oceanography 101.

### 111 Ocean Waves and Tides (3)

All aspects of waves and tides; survey of tidal theory and analysis. Prerequisite: Mathematics 24, Oceanography 102.

### 112 Biological Oceanography (3)

Biological science as related to marine environment. Prerequisite: Oceanography 102.

## Pharmacology

*Chairman:* H.G. Mandel, Professor of Pharmacology; School of Medicine, Telephone: 331-6541

### 110 Pharmacology of Anesthesia (3)

Lectures and conferences concerning the physiological and pharmacological principles of clinical anesthesia, on the theoretical basis for the use of pharmacological agents.

## Philosophy

*Chairman:* R.H. Schlagel, Associate Professor of Philosophy; N-30, Telephone: 676-6265

### 51-52 Introduction to Philosophy (3-3)

Problems of modern philosophy in relation to scientific and social developments since the Renaissance. *First half:* theories of knowledge. *Second half:* theories of reality. Philosophy 51 or 52 may be taken independently.

\* Affiliated with the Department of Mathematics.



## Physical Education\*

*Chairman for men:* V.J. DeAngelis, Professor of Physical Education, Health, and Recreation for Men; S-11, Telephone: 676-6250

*Chairman for women:* Loretta Stallings, Professor of Physical Education, Health, and Recreation for Women; K-20, Telephone: 676-6280

†1-2 **Freshman Physical Education** (1-1) (Campus Course)

†11-12 **Sophomore Physical Education** (1-1) (Campus Course)

### 101 **Physical Education in the Elementary School** (3)

Physical growth and development of the child and adolescent. Survey of age characteristics and organization of physical education activities for the various age levels in elementary school, playground, and settlement house programs. Methods and materials of tumbling, games, dance, and self-testing activities.

## Physics

*Chairman:* H.H. Hobbs, Professor of Physics: Samson 210, Telephone: 676-6275

### 1 **General Physics** (4) (Campus Course)

Topics in classical physics which form a foundation for modern physics. Prerequisite: two years of college preparatory mathematics or concurrent registration for Mathematics 6. Laboratory fee, \$11.

### 2 **General Physics** (4) (Campus Course)

Electricity, magnetism, and selected topics from modern physics. Prerequisite: Physics 1 or equivalent. Laboratory fee, \$11.

### 30 **General Physics** (4) (Campus Course)

Lecture (2 hours), recitation (1 hour), laboratory (2½ hours). Primarily topics from mechanics and electricity. Prerequisite: Physics 1 or consent of adviser, and one semester of calculus. Laboratory fee, \$11.

### 31-32 **Introduction to Theoretical Physics** (2-2) (Campus Course)

Theoretical structure of physics, emphasis on appropriate analytical techniques. Prerequisite: one year of calculus and Physics 30.

### 51-52 **Introduction to Experimental Physics** (2-2) (Campus Course)

Experiments and lectures on the basic phenomena of physics and techniques of experimentation. Prerequisite: Physics 2 or 30, and one year of calculus. Material fee, \$11 a semester.

### 161 **Mechanics I** (3) (Campus Course)

Mechanics of mass points and rigid bodies, Newton's Laws, conservation laws, Euler's equations, inertia tensor, small vibrations, and elements of Lagrange's and Hamilton's equations.

\* Administered by the Departments of Physical Education, Health, and Recreation.

† A Physical Education fee of \$4.50 a semester is required for registration in one or more of the activity courses.



**162 Mechanics II (3) (Campus Course)**

Basic aspects of elasticity and fluid dynamics, strain tensor, stress tensor, equations of equilibrium, elastic waves, ideal and viscous fluids.

**163 Optics (3) (Campus Course)**

Oscillations and waves, energy and momentum of the electromagnetic field, interference, diffraction, geometrical optics, optics of crystals and other media, dispersion.

## Political Science

*Chairman:* W.H. Kraus, Professor of Political Science; Government 403, Telephone: 676-6290.

**\*5-6 Introduction to Political Science (3-3)**

*(Replaces former Political Science 1 and 9-10)*

*First half:* structure, powers, and processes of the American political system—Congress, the President, and the Supreme Court; elections, political parties, and pressure groups; state and local government. *Second half:* nature and study of politics—theories, forms, and processes of political systems; international relations and political ideologies.

**111 Comparative Government and Politics (3)**

Introduction to government and politics of the principal constitutional democracies of Western Europe: Great Britain and France.

**112 Comparative Government and Politics (3)**

Introduction to government and politics of the principal political systems of Central and Eastern Europe: Germany and the Soviet Union.

**121-22 U.S. Constitutional Law and Politics (3-3)**

*(Formerly The Constitution of the United States)*

*First half:* separation of powers, federal-state relationships, economic regulation. *Second half:* political and civil rights.

**145 Political Parties and Politics (3)**

Organization and operation of political parties in the United States: party system and structure, role of ideology, voting behavior, campaigns and elections, devices for organizing the government.

**146 Political Pressures and Public Reactions (3)**

Public opinion, special interest lobbies, and pressure groups as they operate on government to influence public policy.

**151-52 Public Administration (3-3)**

Theory and practice of governmental administration and its relation to other public and private organizations and interests; introduction to organization theory and behavior.

**167 U.S. Foreign Policy (3)**

Constitutional and political factors that determine the formulation, execution, and substance of U.S. foreign policy.

\*Prerequisite to Political Science courses from 101 through 200.



**171 International Politics (3)**

International actors, international and domestic environments of foreign policy, global and regional patterns, general characteristics of foreign policy.

**172 International Organization (3)**

Development and operation of general and regional international organizations, emphasis on the United Nations.

**181-82 Public International Law and Organization (3-3)**

Survey of public law of nations. *First half:* emphasis on law of peace. *Second half:* attention to neutrality and so-called law of war.

**190 Politics of Middle and Southern Africa (3)**

Political life of states and dependent territories of non-Mediterranean Africa, including upper Nile valley and Horn of Africa. Attention to specifically regional aspect of foreign policies of these countries.

**191 Governments and Politics of the Middle East (3)**

Domestic and international politics of eastern Arab states, Turkey, Iran, and Israel.

**192 Governments and Politics of North Africa (3)**

Domestic and international politics of Algeria, Tunisia, Morocco, Libya, Egypt, Sudan; their relations with states of the Middle East.

**193 Governments and Politics of South and Southeast Asia (3)**

Domestic and international politics of the major states in the area, particular reference to India.

**194 Governments of China and Japan (3)**

Institutions and processes of government of contemporary China and Japan, with some historical background. Attention to ideological forces.

**212 Seminar: Comparative Government and Politics (3)**

Selected topics in comparative political institutions and politics. Each semester is devoted to a selected country or significant institutional or policy problem. Attention is directed to questions of method.

**271-72 Problems in International Organization (3-3)**

Reading and research as a basis for analyzing developments in general and regional international organizations.

**\*283 Topics in International Law (3)**

Consideration of theory, problems, and cases in the public law of nations including the law of peace and the law of war.

**\*285 Diplomacy since World War II (3)**

Recent changes in diplomatic procedures and objectives as compared with those of earlier periods.

**299-300 Thesis Research (3-3)**

\* War Colleges' curricula only.



## Psychology\*

Chairman: B.I. Levy, Professor of Psychology; Monroe 426, Telephone: 676-6320

- 1 **General Psychology** (3)  
Lecture (2 hours), discussion (1 hour). Fundamental principles underlying human behavior.
- 8 **Psychology of Motivation and Personality** (3)  
Introduction to psychology of personality. Principles of motivation, personality development, social and cultural factors, and assessment and description of personality emphasized.
- 22 **Introduction to Educational Psychology** (3)  
Consideration of individual and group differences, adjustments, and the psychology of learning in relation to education and training.
- 29 **Psychology of Childhood** (3)  
Genetic approach to study of the child. Emphasis on the socialization process, learning, and the child's view of the world.
- 101 **Abnormal Psychology** (3)  
Causes, diagnosis, treatment, and prevention of various types of maladjustments and mental disorders. Prerequisite: 6 semester hours in psychology, or 3 in psychology and 6 in a biological science.
- 112 **Psychology of Adolescence** (3)  
Psychological characteristics and problems peculiar to adolescence, with emphasis on applications of psychology to solution of such problems.
- 121 **Psychology of Learning** (3)  
Current learning theories and issues.
- 129 **Motivational Factors in Personality** (3)  
Survey of basic principles and assessment techniques, with emphasis on applications to counseling.
- 131 **Psychological Tests** (3)  
Survey of psychological tests and their more common uses in business, industry, government, law, medicine, and education. Material fee, \$7.
- 144 **Personnel and Industrial Psychology** (3)  
Psychological concepts and methods applied to problems of personnel management, human engineering, employee motivation, and productivity.
- 145 **Psychology of Management** (3)  
Primarily for students in the School of Engineering and Applied Science. Introduction to principles of industrial organizations and personnel selection.
- 151 **Social Psychology** (3)  
The social foundations of attitudes and behavior: cognition, motivation, role-behavior, communication, small-group processes, racial attitudes, nationalism, and war.

\* Psychology 1 is prerequisite to all other courses in Psychology. Psychology 1 and 8, or 1 and 22, or 1 and 29 are prerequisite to courses numbered 101 through 200.



**156 Psychology of Attitudes and Public Opinion (3)**

Psychology of opinion formation, measurement of opinion, social determinants of attitudes, psychological processes in propaganda, the bases of receptivity of propaganda, psychological warfare.

**231 Development of Psychometric Instruments (3)**

Quantitative techniques and principles used in construction, standardization, and evaluation of personality and ability measures for research and practice; quantification of human judgment for measurement purposes. Prerequisite: course in tests and measurements and an elementary course in statistics.

**245 Seminar: Organizational Behavior (3)**

Analysis of organizational behavior; emphasis on motivation and productivity. Recent research on employee attitudes, primary group, effects of various patterns of supervisory leadership, role of formal and informal organization, job design.

**246 Seminar: Personnel Measurement Techniques (3)**

Detailed consideration of techniques of personnel selection and performance evaluation. Employment tests, personal data, assessment interviews, and performance ratings.

**299-300 Thesis Research (3-3)**

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**Public Administration**

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*Chairman:* K.E. Stromsem, Professor of Public Administration; Government 201, Telephone 676-6295

**199-200 Research (3-3)****213 Administration in Government (2 or 3)**

Critical analysis of federal administrative organizations as an integral part of the political system. Roles of Congress, the Presidency, the Courts, interest groups, political parties, and the public in the administrative process; special attention to centripetal and centrifugal forces.

**221 Management in the Executive Branch (3)**

Analysis of application of management theory and practice in the Executive Branch of the Federal Government; emphasis on staff responsibilities and relationships and internal organization and control.

**231 Public Personnel Administration (3)**

Survey of basic principles and functions of personnel administration in the public service; roles of personnel management; recruitment; placement; wage and salary administration; training; retirement, and other personnel functions.

**232 Problems in Public Personnel Management (3)**

*(Formerly Federal Personnel Procedures)*

Analysis and evaluation of major personnel management problems in government; employee-management relations; interagency and intergovernmental relationships. Impact of automation. Evaluation of personnel systems.



**233 Seminar: Manpower Development and Utilization (3)**

Analysis of manpower resources. Research projects and case studies in ways and means of increasing employee potential; use of training programs, executive development, incentive systems.

**251 Governmental Budgeting (2 or 3)**

Survey of the basic concepts, principles, and practices in governmental budgeting; interrelationship of planning, programming, and budgeting; their role in the management process.

**252 Problems in Planning, Programming, and Budgeting (3)**

Intensive analysis of developments in federal planning, programming, and budgeting, application of new tools in the decision-making process, evaluation of the systems.

**260 Seminar: Policy Formulation and Administration (3)**

Analysis in depth of factors and processes involved in policy development, with particular attention to selected areas of national policy; development of agency goals and objectives.

**261 The Public and the Administrator (3)**

Nature of the public interest, ways of determining public opinion, public opinion and the decision-making process, theories and methods of working with the public, interest groups, public relations and information programs.

**298 Case Studies in Public Administration (3)**

Analysis and discussion of problems in public management by use of the case method.

**299 Thesis Seminar (3)**

Examination of thesis standards, research philosophy, and methodology.

**300 Thesis Research (3)****Religion**

Chairman: R.G. Jones, Professor of Religion; O-21, Telephone: 676-6325

**9 The Old Testament (3)**

Historical and literary study of the Old Testament with consideration of development of religious ideas, institutions, and outstanding personalities.

**10 The New Testament (3)**

Study of New Testament literature from the standpoint of occasion, purpose, dominant ideas, and permanent values. Emphasis on approach, structure, and significance of the Gospels and Epistles.

**59-60 History of Religions (3-3)**

*First half:* primitive and ancient national religions: Confucianism, Taoism, Buddhism, Hinduism, and Shintoism—their historical setting, founders, and development of religious thought and culture. *Second half:* Zoroastrianism, Judaism, Christianity, and Islam—analysis of their origin, evolution, and contemporary status.



**172 Religion in American Culture (3)**

Growth of religious bodies and institutions in American culture, the heritage of religious freedom and diversity, the development of religious thought, and analysis of the contemporary religious scene.

**132 History of Modern Christianity (3)**

Origin and development of Protestantism; Roman Catholic revival; status of Eastern churches; doctrines, worship, expansion, church and state, and relation to modern thought and life.

**Slavic Languages and Literatures\***

*Chairman:* Helen Yakobson, Professor of Russian; GG-10, Telephone: 676-6335

**1-2 First-year Russian (3-3)**

A year course: credit given on completion of Russian 2. Beginners' course in fundamentals of grammar and pronunciation with graded reading, oral drill, and written practice. Listening comprehension and oral practice.

**†1S-2S Scientific Russian for Beginners (3-3)**

An introduction to the essentials of Russian grammar and reading of modern scientific texts.

**3-4 Second-year Russian (3-3)**

A year course: credit given on completion of Russian 4. Systematic review of grammar. Study of special problems of Russian morphology and syntax. Oral and written reports on assigned topics. Prerequisite: Russian 1-2 or two years of high school Russian.

**9-10 Russian Conversation and Composition (3-3)**

Listening comprehension; oral and written practice. Prerequisite: Russian 3-4 or permission of the instructor.

**91-92 Introduction to Russian Literature (3-3)**

Survey of Russian literature, in translation, from earliest periods through literary masterpieces of the 19th and early 20th centuries. Lecture, recitation, and discussion—in English.

**93-94 Introduction to Slavic (non-Russian) Literature (3-3)**

Survey of non-Russian Slavic literatures, in translation, from early periods to present; emphasis on the contemporary scene. Lecture, recitation, and discussion—in English.

**109-10 Advanced Russian Conversation and Composition (3-3)**

Developing proficiency in oral and written expression. Prerequisite: Russian 10 or equivalent.

**161-62 Russian Culture (3-3)**

Survey of Russian cultural heritage from origins of ancient Russia to present—in English. Lecture, recitation, discussion, and individual reports on assigned topics.

\* Administered by the Department of Slavic and Oriental Languages and Literatures.  
† This is a special course. It cannot serve as a prerequisite to any advanced course in Slavic Languages and Literatures.



**165 Soviet Literature (3)**

Survey of major literary figures, movements, styles. Revolution and its impact on literature and writers. Revival of psychological novel, short story, contemporary poetry—in English.

**Sociology**

*Chairman:* R.G. Brown, Professor of Sociology; Chapin 203, Telephone: 676-6660

**\*1-2 Introductory Sociology (3-3)**

Development of culture and personality, the impact of groups and institutions on man's social behavior. A survey of the fields within sociology.

**41 American Social Problems (3)**

Analysis of major social problems confronting the United States. Factors producing social problems, their nature and treatment.

**124 Medical Sociology (3)**

Sociological factors and processes which relate to physical and mental health and disease, analysis of patterned social relationships in the field of health and medicine, the hospital as a social system.

**126 Urban Sociology (3)**

Place of the city in larger society; growth of the city, problems of urban living, group life, personality, urban housing, city planning, and suburban development.

**127 Population Problems (3)**

Composition of populations, trends in population growth and population pressure, factors producing population movements, effects of migration, population policies; eugenics and birth control.

**129 Race and Minority Groups (3)**

Analysis of relationships between dominant and minority groups in society, particularly in the United States; nature and range of problems; analysis of the phenomenon of prejudice.

**130 Social Stratification: Class and Status (3)**

Nature of class structure patterns of status, prestige relations, differential class behavior, analysis of comparative social structure and social mobility.

**134 Marriage and the Family (3)**

Courtship as a social process, marriage and marital adjustment, development of the family, life, parent-child relations, family problems, disorganization, divorce and family reorganization.

**135 Juvenile Delinquency (3)**

Factors producing delinquency, juvenile detention, the juvenile court, training schools, treatment of offenders.

\*Sociology 1 is prerequisite to all other courses in Sociology.



## Spanish\*

*Chairman:* J.A. Frey, Associate Professor of Romance Languages; A-10, Telephone: 676-6330

### 1-2 First-year-Spanish (3-3)

A year course: credit given on completion of Spanish 2. For beginners. Pronunciation, conversation, grammar, composition, reading of modern Spanish prose.

### 3-4 Second-year Spanish (3-3)

A year course: credit given on completion of Spanish 4. Conversation, grammar, composition, reading of modern Spanish prose, introduction to Hispanic civilization. Prerequisite: Spanish 1-2, or two years of high school Spanish.

### 51-52 Survey of Spanish Literature and Civilization (3-3)

The social, artistic, and cultural background of Spanish civilization. Lectures, readings, recitations, and informal discussion.

## Special Education

*Chairman:* Perry Botwin, Professor of Special Education; S-30, Telephone: 676-6170

### 201 Education of Exceptional Children (3)

*(Formerly Education 180)*

For prospective teachers. Educational modifications necessary to accommodate children with mental, physical, social, and emotional deviations in a school program. Prerequisite: Psychology 22 or equivalent, and at least 6 semester hours of foundation courses in Education.

### 202 Nature and Needs I: the Mentally Retarded (3)

*(Formerly Education 181)*

Nature and needs of children with varying degrees of retardation. Causation and diagnosis of retardation; psychological and sociological implications. Principles of learning with respect to teaching retarded children. Prerequisite: Psychology 22 or equivalent, and at least 6 semester hours of foundation courses in Education.

### 203 Teaching Mentally Retarded Children (3)

*(Replaces former Education 185 and 186)*

Educational methods and curricula developed for the mentally retarded from nursery school through junior high school. Organization and planning of instructional activities; selection and preparation of materials. Prerequisite: Special Education 201 and 202, or permission of instructor.

### 204 Nature and Needs IV: the Culturally Disadvantaged (3)

Environmental factors within our society which disadvantage children's capabilities to achieve school and life success. Early experiential deprivation, home and neighborhood values and expectancies, and self-concept development. Admission by permission of instructor.

\* Administered by the Department of Romance Languages and Literatures.



- 240 **Nature and Needs II: the Emotionally Disturbed (3)**  
*(Formerly Education 187)*  
 Analysis of educational provisions for seriously disturbed children: definitions, characteristics, identification, and programs for prevention and re-education. Admission by permission of instructor.
- 242 **Clinical Teaching of Emotionally Disturbed Children (3)**  
 Lectures and discussions exploring psychoeducational techniques of teaching emotionally disturbed children and adolescents, interpersonal interaction between teachers and disturbed children. Selection of teaching methods and materials. Admission by permission of instructor.
- 260 **Nature and Needs III: Crippled or Health Impaired (3)**  
*(Formerly Education 329)*  
 Theory of crippling and other health-impairing conditions as they affect the needs of children. Examination of curricula. Prerequisite: Special Education 201 and permission of instructor.
- 261 **Methods and Materials for Crippled or Health Impaired (3)**  
 Methods and materials for teaching children with orthopedic, neurological, and other health-related disorders at different maturational levels. Organization and planning of instructional activities. Prerequisite: Special Education 201 and 260, or permission of instructor.
- 301 **Psychology of Exceptional Children (3)**  
*(Formerly Education 321)*  
 Research on social, emotional, physical, and learning characteristics of handicapped children. Admission by permission of instructor.
- 302 **Problems and Issues in Mental Retardation (3)**  
*(Formerly Education 322)*  
 Identification, diagnosis, and placement; problems involved in providing education and social control; teaching methodology; equipment and supplies. Admission by permission of instructor.
- 303 **Administration and Supervision of Special Education (3)**  
*(Formerly Education 323)*  
 Philosophy and nature of special education; program organization, administration, and development. Surveying local level needs; program evaluation and supervision. Admission by permission of instructor.
- 306 **Guidance and Counseling of Exceptional Children (3)**  
*(Formerly Education 246)*  
 Educational, mental, social, vocational guidance of exceptional children and youth. Role of teacher in parent counseling. Community agencies involved in postschool rehabilitation, guidance, and recreational service for exceptional children. Admission by permission of instructor.
- 340 **Mental Health of Culturally Deprived and Emotionally Disturbed Children (3)**  
*(Formerly Education 313)*  
 Mental health problems affecting the culturally deprived child's vocational, educational, and emotional needs; teacher-child relationships; language differences in socioeconomic environments.



## Speech and Drama

*Chairman:* L.P. Leggette, Depew Professor of Speech and Professor of Drama; Auditorium 4, Telephone: 676-6350

### 1 Effective Speaking (3)

Preparation and delivery of extempore speeches, developing confidence and poise, body and voice control; selecting and organizing material. Recording fee, \$2.

### 2 Persuasive Speaking (3)

Continuation of Speech and Drama 1, which is prerequisite, emphasis on speech composition and elementary principles of persuasion.

### 11 Voice and Diction (3)

Developing ease, naturalness, and clarity in the speaking voice. Analysis of individual voices through recordings. Phonetic approach to the study of sounds of English, standards of speech. Class instruction in problems of rate, volume, pitch, and quality. Recording fee, \$4.

### 91 Parliamentary Procedure and Group Participation (3)

Principles and procedures for effective speech communication to function successfully at various levels of responsibility in academic, social, professional, civic, or business organizations. Prerequisite: Speech and Drama 1 or 11, or permission of instructor.

### \*111 Effective Speech Communication (3)

The tools and principles of effective speech communication, including practice in the organization, delivery, and evaluation of presentations commonly encountered by professional personnel. Not open to speech majors.

### 121 Group Discussion and Conference Leadership (3)

Process of thinking and problem solving in committees and small groups; methods of leading discussions and conferences. Prerequisite: 6 hours of speech or permission of instructor.

## Statistics

*Chairman:* Solomon Kullback, Professor of Statistics; Government 103, Telephone: 676-6355

### †51 Introduction to Business and Economic Statistics (3) (Campus Course)

Lecture (2 hours), laboratory (2 hours). Elementary principles for analyzing and interpreting statistical data; characteristic values; measures of variability, sampling, time series analysis, and simple correlation. Laboratory fee, \$9.

### 52 Mathematics of Finance (3) (Campus Course)

Interest and discount, annuities, valuation of stocks and bonds, sinking funds, amortization, valuation of depletable assets, depreciation.

\* This course can be adapted to the needs of a specific group.

† Statistics 101-2: *Basic Principles of Statistical Methods* (3-3), which is offered off campus, may be substituted.



- 91 Principles of Statistical Methods (3) (Campus Course)**  
Lecture (2 hours), laboratory (2 hours). Variables and attributes, averages and dispersion, frequency distributions and their characteristics, regression and correlation, statistical decision processes. Laboratory fee, \$9.
- 101-2 Basic Principles of Statistical Methods (3-3)**  
Variables and attributes, averages and dispersion, elementary principles of sampling, introduction to the making of statistical decisions.
- \*104 Statistics in the Behavioral Sciences and Education I (3) (Campus Course)**  
Lecture (2 hours), laboratory (2 hours). Introductory study of statistical techniques for research problems in behavioral sciences and education. Laboratory fee, \$9.
- 107 Statistics for Engineers (3)**  
Probability models, discrete and continuous distributions, sampling, hypothesis testing and estimation, engineering applications. Prerequisite: differential and integral calculus.
- 109-10 Quality Control and Reliability Techniques (3-3)**  
Statistical methods and probability models for quality control and reliability applications. Prerequisite: Statistics 91 or 107.
- 111 Business and Economic Statistics I (3)**  
Statistical processes as tools in decision making in areas of economics and business. Prerequisite: Statistics 51 or permission of instructor.
- 112 Business and Economic Statistics II (3)**  
Case work to illustrate quantitative procedures for solution of economic and business problems. Prerequisite: Statistics 111 or equivalent.
- 117 Analysis of Variance (3) (Campus Course)**  
Lecture (2 hours), laboratory (2 hours). Introduction to the design of experiments and analysis of variance; random block, factorial, Latin square and Greco-Latin square designs; analysis of covariance. Prerequisite: 3 semester hours selected from Statistics 91, 104, 107. Laboratory fee, \$9.
- 118 Correlation and the Chi-square Test (3) (Campus Course)**  
Lecture (2 hours), laboratory (2 hours). Regression and correlation theory: simple, partial, and multiple; contingency-table analysis; tests of goodness of fit. Prerequisite: 3 semester hours selected from Statistics 91, 104, 107. Laboratory fee, \$9.
- 155 Introduction to Probability (3) (Campus Course)**  
Probability distribution, Bayes' theorem and postulate, Bernoulli's theorem and its experimental verification, mathematical expectations, laws of large numbers. Prerequisite: one entrance unit in algebra.
- 157-58 Introduction to Mathematical Statistics (3-3) (Campus Course)**  
Distribution theory, sampling theory, estimation, hypothesis testing, regression analysis, experimental design. Prerequisite: differential and integral calculus.

\* May not be taken for credit by students who have received credit for Statistics 51, 53, or 91.



**207-8 Operations Analysis (3-3)**

Basic concepts and techniques. Introduction to simulation, linear programming, game theory, queueing theory, inventory theory, and other topics. Admission by permission of instructor.

**Swedish\***

*Chairman:* J.C. King, Professor of German; Monroe 405, Telephone: 676-6195

**1-2 First-year Swedish (3-3)**

A year course: credit given on completion of Swedish 2. Essentials of Swedish grammar, conversation, composition, and reading of simple prose.

\* Administered by the Department of Germanic Languages and Literatures.



## THE UNIVERSITY

### HISTORY

THE GEORGE WASHINGTON UNIVERSITY had its beginning in 1821 as The Columbian College in the District of Columbia. The name of the institution was changed in 1873 to Columbian University and in 1904 to The George Washington University. The debt of the University to George Washington, whose name it bears, is an intangible one.

George Washington, as President and as private citizen, had urgently insisted upon the establishment of a National University in the Federal City. There he hoped that, while being instructed in the arts and sciences, students from all parts of the country would acquire the habits of good citizenship, throwing off local prejudices and gaining at first hand a knowledge of the practice, as well as the theory, of republican government. To further the materialization of his hopes, Washington left a bequest of fifty shares of The Potomac Company "towards the endowment of a University to be established within the limits of the District of Columbia, under the auspices of the General Government, if that government should incline to extend a fostering hand towards it." The Congress never extended "a fostering hand." The Potomac Company passed out of existence, and Washington's bequest became worthless.

Fully conscious of Washington's hopes, but motivated primarily by a great missionary urge and the need for a learned clergy, a group of dedicated ministers and laymen sponsored a movement for the establishment of a college in the District of Columbia. Inspired largely by the zeal and energy of the Reverend Luther Rice, they raised funds for the purchase of a site and petitioned Congress for a charter. After much delay and amendment, Congress granted a charter which was approved by President Monroe on February 9, 1821. To safeguard the College's nonsectarian character it provided "That persons of every religious denomination shall be capable of being elected Trustees; nor shall any person, either as President, Professor, Tutor or pupil, be refused admittance into said College, or denied any of the privileges, immunities, or advantages therefore, for or on account of his sentiments in matters of religion."

During the entire time when the institution was known as Columbian College, its activities were centered on College Hill, a tract of forty-six and a half acres between the present Fourteenth and Fifteenth Streets extending north from Florida Avenue to somewhat beyond Columbia Road. The Medical School was located downtown. For the better part of the Columbian University period,



the buildings of the University were situated along H Street between Thirteenth and Fifteenth Streets. The Medical School group still remains there.

During the last half century the University's present plant has been developed in that section of the old First Ward familiarly known as "Foggy Bottom," between Nineteenth and Twenty-fourth Streets, south of Pennsylvania Avenue. The area is not without its reminders of historic interest to the University. President Monroe, who signed the charter, lived at 2017 Eye Street. The first President of the Board of Trustees, the Reverend Obadiah B. Brown, was for fifty years the pastor of a church at Nineteenth and Eye Streets, and Washington selected Twenty-third and E Streets as the site of the National University he had hoped to see established.

### THE COLLEGES, SCHOOLS, AND DIVISIONS

The George Washington University includes eleven colleges, schools, and divisions, as follows:

*Columbian College of Arts and Sciences\**, through its lower and upper divisions, offers four-year programs in the arts and sciences leading to the degrees of Bachelor of Arts, Bachelor of Science, and (in cooperation with the Department of Pathology and the University Hospital) Bachelor of Science in Medical Technology. The lower division also provides the first two years of the prelegal and premedical programs; the preprofessional work required for admission to the School of Education, the School of Government and Business Administration, and the School of Public and International Affairs; and a two-year terminal Associate in Arts curriculum in Accounting. The College also has academic jurisdiction over off-campus programs leading to the degrees of Bachelor of Science in General Studies and Bachelor of Science in Geodetic and Cartographic Science. These off-campus programs are administered by the College of General Studies.

*The Graduate School of Arts and Sciences\** offers advanced study and research leading to the degrees of Master of Arts, Master of Fine Arts, Master of Music, Master of Science, and Doctor of Philosophy.

*The School of Medicine\** offers work leading to the degree of Doctor of Medicine.

*The National Law Center* offers courses leading to the degrees of Bachelor of Laws, Master of Laws, Master of Comparative Law, Master of Comparative Law (American Practice), and Doctor of Juridical Science; and special programs in Continuing Legal Education.

*The School of Engineering and Applied Science* offers courses leading to the degree of Bachelor of Science in the following areas: Civil Engineering, Electrical Engineering, Measurement Science, and Mechanical Engineering. Graduate programs lead to the degrees of Master of Science, Master of Engineering Administration, and Doctor of Science.

*The School of Education* offers undergraduate programs leading to the degrees of Bachelor of Arts in Education and Bachelor of Science in Physical Education; graduate studies leading to the degrees of Master of Arts in Education, Education Specialist, and Doctor of Education.

\* Columbian College of Arts and Sciences and the Graduate School of Arts and Sciences cooperate with the School of Medicine in offering the combined degrees of (1) Bachelor of Arts and Doctor of Medicine and (2) Master of Science and Doctor of Medicine.



*The School of Government and Business Administration* offers undergraduate programs leading to the degree of Bachelor of Business Administration and graduate programs leading to the degrees of Master of Arts in Government, Master of Business Administration, Master of Public Administration, Master of Urban and Regional Planning; the Graduate Certificate in Health Care Administration; the degrees of Doctor of Business Administration and Doctor of Public Administration. The School also has academic jurisdiction over off-campus programs leading to the following degrees: Bachelor of Business Administration, Bachelor of Science in General Studies, Master of Science in Administration, Master of Science in Business Administration, Master of Science in Financial Management, Master of Science in Governmental Administration, Master of Science in Personnel Administration, and Master of Science in Public Administration. These off-campus programs are administered by the College of General Studies.

*The School of Public and International Affairs* offers undergraduate programs leading to the degree of Bachelor of Arts and graduate programs leading to the Certificate of the Institute for Sino-Soviet Studies and the degree of Master of Arts. The School of Public and International Affairs has academic jurisdiction over the off-campus program leading to the degree of Master of Science in International Affairs, which is administered by the College of General Studies.

*The College of General Studies* supplements the adult education program of the University through campus and off-campus study; conferences, seminars, and special projects; and continuing education and noncredit programs. The College of General Studies also administers the off-campus programs over which the Columbian College of Arts and Sciences, the School of Government and Business Administration, and the School of Public and International Affairs have academic jurisdiction.

*The Division of University Students* makes available courses for students not candidates for degrees in this University.

*The Summer Sessions.*

## ACADEMIC STATUS

The George Washington University is accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools. This is important to students who wish to transfer credits from one institution to another.

The University is on the approved list of the American Association of University Women and is a member of the College Entrance Examination Board.

The School of Government and Business Administration has maintained full membership in the Middle Atlantic Association of Colleges of Business Administration since 1961. The programs in Public Accounting designed to prepare students for Certified Public Accountants examinations have been approved by the state boards of New York and of Maryland.

## LOCATION

The George Washington University is in downtown Washington, four blocks west of the White House and east of the Potomac River with its extensive park-



way. Within a few blocks are the buildings housing the offices of many of the departments of the Government.

### GOVERNMENT

The government and general education management of The George Washington University are vested in a self-perpetuating Board of Trustees, with the President of the University as an ex officio member. The members of the Board are named for a period of three years and are divided into three classes. The members of one class are elected at each annual meeting to fill the places of the members whose terms of office expire. Two members of each class are nominated by the Alumni Association.

### THE GENERAL ALUMNI ASSOCIATION

The objectives of this Association are to unite the graduates who wish to associate themselves for charitable, educational, literary, and scientific purposes, and to promote the general welfare of the University.

Eligible members are those who have matriculated in any school of the University and who have left the University in good standing, or any person who is or has been a member of the teaching, research, or administrative staff of the University, or of the Board of Trustees of the University. Active members are those eligible members who are current contributors to or life members of The George Washington University General Alumni Association, the Alumni Association of any school of the University, or contributors to the Annual Support Program.

The Alumni Office is in Bacon Hall, 2000 H Street, N.W., Washington, D. C. 20006.

All alumni are urged to keep the Alumni Office informed of changes of address or occupation and to supply information with regard to their fellow alumni.

### THE BOARD OF TRUSTEES

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Charles Emory Phillips, LL.B., LL.M., *Vice Chairman*

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\*Harry Filmore Dowling, A.B., M.D., Sc.D.

Harry F. Duncan

\* Nominated by the Alumni.



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\*Robert Daniel Murphy, LL.B., LL.M., LL.D.

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Carleton D. Smith

Charles E. Smith

Lewis L. Strauss, Sc.D., LL.D., L.H.D.

John W. Warner, B.S., LL.B.

\*John Johnston Wilson, LL.B.

Watson W. Wise, Ph.B.

Stephen Russell Woodzell, B.S. in E.E.

\*James Otis Wright, B.S., LL.B.

Eugene M. Zuckert, A.B., LL.B., LL.D., Sc.D.

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Charles Carroll Glover, Jr., A.M., LL.B., LL.D.

Ulysses S. Grant III, B.S., Graduate United States Engineers School, LL.D., Sc.D., L.H.D.

Alfred Henry Lawson, LL.B., LL.D.

John Keown McKee

Benjamin Mosby McKelway, Litt.D.

Sidney William Souers, A.B., LL.D.

Alexander Wetmore, Ph.D., Sc.D.

Charles Stanley White, M.D., Sc.D.

Lloyd Bennett Wilson

#### OFFICERS OF ADMINISTRATION

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William Parkhurst Smith, Jr., A.B., M.B.A., *Executive Assistant to the President*

Claud Max Farrington, A.M., *Assistant to the President for Special Projects*

\*Nominated by the Alumni.



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 Carl Hugo Walther, M.C.E., Ph.D., *Assistant Vice President for Academic Affairs*  
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 William David Johnson, B.S., *Comptroller*  
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 Margaret Payne Greene, B.S., *Assistant Treasurer, Contract Research*  
 Maurice Kingsley Heartfield, Jr., A.B., *Assistant Treasurer; Director, Office of Student Financial Aid*  
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 Louis Harkey Mayo, B.S., J.S.D., *Vice President for Advanced Policy Studies*  
 Paul Vernon Bissell, Ph.D., *Director of Student Services; Director of Veterans Education*

Curtis Tufts Bacon, *Director of Personnel Services*  
 Richard Bernard Castell, A.B., M.D., *Director of Health Services*  
 Charles William Cole, Ph.D., *Dean of the Summer Sessions*  
 Robert Faris, B.S., *Director of Men's Athletics*  
 Nelson Mead Head, B.S., *Administrator of the Office of Sponsored Research*  
 Frederick Russell Houser, A.M., *Registrar*  
 Elmer Louis Kayser, Ph.D., LL.D., *University Historian*  
 John Francis Latimer, Ph.D., Litt.D., *University Marshal*  
 Joseph Young Ruth, A.B., *Director of Admissions*  
 Ellwood Anthony Smith, B.S. in Ed., *Director of Alumni Relations*  
 Loretta May Stallings, A.M., Ed.D., *Director of Women's Athletics*  
 William Alexander Riddell Walker, A.M., *Adviser to International Students*  
 Donald Winkler, A.B., M.S., *Director of Public Relations*  
 Rupert Woodward, B.S., B.S. in L.S., A.M., *Director of Libraries*  
 Donald Young, A.M., *Dean of Men*

#### THE COLLEGE OF GENERAL STUDIES

Eugene Ross Magruder, M.B.A., Ph.D., *Dean of the College of General Studies*  
 Robert Whittington Eller, B.S., Ed.D., *Assistant Dean of the College of General Studies*  
 Elzberry Waters, Jr., A.M., *Director of Credit Programs*

#### COLUMBIAN COLLEGE OF ARTS AND SCIENCES

Calvin Darlington Linton, Ph.D., *Dean of Columbian College of Arts and Sciences*  
 George Martin Koehl, A.M., *Associate Dean of Columbian College of Arts and Sciences*  
 Joseph Louis Metivier, Jr., A.M., *Assistant Dean of Columbian College of Arts and Sciences*  
 Robert Clinton Rutledge, Ph.D., *Assistant Dean of Columbian College of Arts and Sciences*



Harry Elwood Yeide, Jr., Ph.D., *Assistant Dean of Columbian College of Arts and Sciences*

#### SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION

James Carlton Dockeray, Ph.D., *Dean of the School of Government and Business Administration*

Edwin Joseph Baughman Lewis, A.B., M.B.A., *Assistant Dean for Special Projects in the School of Government and Business Administration*

#### SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS

Hiram Miller Stout, Ph.D., *Acting Dean of the School of Public and International Affairs*



## COLLEGE OF GENERAL STUDIES

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### STAFF OF INSTRUCTION†

JUNE 1, 1966 TO MAY 31, 1967

Richard Graham Abbott, *Lecturer in Statistics*

B.S. 1956, Trinity College; M.S. 1964, Stanford University

John Thomas Abell, *Lecturer in Business Administration*

B.S. 1954, Michigan State University; M.B.A. 1965, Arizona State University

Leonard Ackerman, *Assistant Professorial Lecturer in Behavioral Sciences*

A.B. 1956, Rutgers, the State University

Elizabeth Byrne Adams, *Assistant Professor of Business Administration*

B.S. 1955, Queens College, New York; A.M. in Ed. 1957, The George Washington University

Nancy Ellen Adams, *Lecturer in Psychology*

A.B. 1957, American University; A.M. 1961, The George Washington University

David Samuel Adorno, *Associate Professorial Lecturer in Mathematics*

A.B. 1953, University of Texas; A.M. 1955, Pennsylvania State University; Ph.D. 1963, Harvard University

James Richard Ahern, *Associate Professorial Lecturer in Business Administration*

B.S. 1947, U.S. Naval Academy; M.B.A. 1959, Harvard University

Edward Francis Allard, *Assistant Professorial Lecturer in Mathematics*

B.S. 1957, Boston College; Ph.D. 1964, University of Missouri

Douglas Arnold Allen, *Assistant Professorial Lecturer in Business Administration*

B.B.A. 1950, University of Washington; M.B.A. 1965, The George Washington University

George Robert Allen, Jr., *Assistant Professorial Lecturer in Business Administration*

B.S. 1956, University of Georgia; M.B.A. 1960, Tulane University of Louisiana

Ahmad Mustafa Al-Samarrie, *Assistant Professorial Lecturer in Economics*

B.S. 1953, University of California; A.M. in Govt. 1959, Ph.D. 1966, The George Washington University

\* The Vice President for Academic Affairs, the Dean and Assistant Dean of the College are ex officio members of the Council.

† Rank shown as of September 1, 1967.



- Robert James Andrews, *Assistant Professorial Lecturer in Business Administration*  
B.S. 1942, M.S. 1947, Pennsylvania State University
- Charles Anello, *Assistant Professorial Lecturer in Statistics*  
B.S. 1958, Maryland State College, Towson; M.S. 1962, Sc.D. 1964, Johns Hopkins University
- Grover LaMarr Angel, *Professor of Education*  
A.B. 1929, High Point College; A.M. in Ed. 1946, Ed.D. 1952, The George Washington University
- José Armilla, *Assistant Professorial Lecturer in Psychology*  
A.B. 1956, University of Oregon; Ph.D. 1960, University of Michigan
- Lewis Jordan Ashley, *Associate Professorial Lecturer in Business Administration*  
B.S., M.B.A. 1959, Syracuse University
- John Littleton Boone Atkinson, *Professor of International Affairs, Air University Center, Maxwell Air Force Base, Alabama*  
A.B. 1939, A.M. 1941, Louisiana State University; Ph.D. 1951, University of Pennsylvania
- Charles Francis Austin, *Professorial Lecturer in Behavioral Sciences*  
M.B.A. 1955, D.B.A. 1964, Harvard University; B.S. 1958, University of Maryland
- Fred Richard Bahr, *Assistant Professorial Lecturer in Behavioral Sciences*  
A.B. 1962, A.M. 1963, The George Washington University
- Robert Edward Baker, *Professor of Education*  
B.S. in Ed. 1939, State University of New York at Buffalo; A.M. 1954, Catholic University of America; A.M. in Ed. 1956, Ed.D. 1962, The George Washington University
- Allen Rogers Barrow, Jr., *Assistant Professorial Lecturer in Education*  
A.B. 1947, Dartmouth College; Ed.M. 1949, Boston University; Ed.D. 1966, The George Washington University
- Walter Joseph Barry, *Assistant Professorial Lecturer in Business Administration*  
B.S. 1937, U.S. Naval Academy; A.M. 1964, The George Washington University
- William Joshua Baxley, Jr., *Associate Professorial Lecturer in Business Administration*  
B.S. 1950, U.S. Military Academy; M.B.A. 1962, University of Alabama
- John Joseph Bean, *Associate Professorial Lecturer in Business Administration*  
B.S. 1950, College of Charleston; A.M. 1958, The George Washington University
- Nicholas Anthony Beninate, *Assistant Professorial Lecturer in Business Administration*  
B.C.S. 1947, University of Georgia; M.B.A. 1955, University of North Carolina
- Andrew Joseph Bennett, *Assistant Professorial Lecturer in Economics*  
A.B. 1950, Yale University
- Jack Ben-Rubin, *Lecturer in Economics*  
A.B. 1954, A.M. 1959, Columbia University
- Gerald David Benzel, *Assistant Professorial Lecturer in Mathematics*  
A.B. 1962, Central Washington State College; M.S. 1964, Texas A&M University
- Clifford Leonard Berg, *Professorial Lecturer in Public Administration*  
A.B. 1942, University of Minnesota; M.P.A. 1951, Ph.D. 1955, Harvard University
- Henry Waite Bigelow, *Assistant Professorial Lecturer in Geodetic and Cartographic Science*  
B.S. 1930, Tufts University; A.M. 1961, The George Washington University
- William Edward Black, *Associate Professorial Lecturer in Economics*  
A.B. 1942, Oglethorpe University; LL.B. 1952, John Marshall Law School; M.B.A. 1955, University of Georgia
- William James Blackburn, *Assistant Professorial Lecturer in Geodetic and Cartographic Science*  
B.C.E. 1955, Ohio State University
- Robert Stephen Blassie, *Assistant Professorial Lecturer in Accounting*  
A.B. 1946, Brown University; M.B.A. 1961, The George Washington University



- James Knox Boak III, *Assistant Professorial Lecturer in Business Administration*  
B.S. 1944, U.S. Naval Academy; A.M. 1963, The George Washington University
- Norman Franklin Board, *Lecturer in Business Administration*  
B.S. in B.A. 1956, Virginia Polytechnic Institute; M.B.A. 1962, The George Washington University
- Robert Emil Boies, *Professorial Lecturer in History*  
A.B. 1942, A.M. 1947, Yale University; Ph.D. 1948, Charles University, Czechoslovakia
- Henry Marshall Booker, *Assistant Professorial Lecturer in Economics*  
A.B. 1959, Lynchburg College; Ph.D. 1965, University of Virginia
- Perry Botwin, *Professor of Special Education*  
B.S. 1942, Rutgers, the State University; A.M. 1947, New York University; Ed.D. 1957, Columbia University
- Maurice Hugh Boutelle, *Assistant Professorial Lecturer in Business Administration*  
Ed.B. 1941, Wisconsin State University; M.B.A. 1956, University of North Carolina
- Lloyd Spencer Bowling, Sr., *Associate Professor of Speech and Hearing*  
A.B. 1954, A.M. 1957, Ed.D. 1964, University of Maryland
- Thomas Boyajy, *Assistant Professorial Lecturer in Economics*  
A.B. 1940, American International College; A.M. 1941, Hartford Seminary Foundation
- Charles Bradley, *Professor of Business Economics*  
B.S. in B.A. 1942, Millikin University; Ph.D. 1948, University of Illinois
- Kenneth Harold Bradt, *Associate Professorial Lecturer in Psychology*  
A.B. 1948, A.M. 1950, Syracuse University; Ph.D. 1951, Northwestern University
- Earl Burk Braly, *Associate Professorial Lecturer in English*  
A.B. 1939, A.M. 1946, Texas Technological College; Ph.D. 1955, University of Texas
- Frank Branca, *Lecturer in Geodetic and Cartographic Science*  
B.S. 1962, State University of New York; M.S. 1966, Purdue University
- Leonard Lee Brannan, *Lecturer in Business Administration*  
M.B.A. 1950, Harvard University
- Ray Bloom Bressler, Jr., *Assistant Professorial Lecturer in Business Administration*  
B.B.A. 1948, University of Cincinnati; M.B.A. 1957, Indiana University
- Carlton Ernest Brett, *Assistant Professorial Lecturer in English*  
Ed.B. 1933, Keene State College; A.M. 1941, Middlebury College
- John Withrow Brewer, *Professor of International Law*  
A.B. 1926, A.M. 1930, Ph.D. 1932, Princeton University
- Michael Brewer, *Professor of Economics*  
B.S. 1953, Yale University; M.S. 1955, University of Michigan; Ph.D. 1959, University of California
- Emidio Joseph Briganti, *Assistant Professorial Lecturer in Business Administration*  
B.S. 1943, University of Alabama; M.B.A. 1957, The George Washington University
- David Springer Brown, *Professor of Public Administration*  
A.B. 1936, University of Maine; Ph.D. 1955, Syracuse University
- George Haskell Brown, *Associate Professorial Lecturer in Psychology*  
A.B. 1947, Ph.D. 1952, New York University
- James Grady Brown, *Associate Professor of Business Administration*  
A.B. in Govt. 1948, A.M. in Ed. 1949, The George Washington University; Ed.D. 1961, University of Maryland
- Richard Gerard Brown, *Professorial Lecturer in Political Science*  
B.S. in B.A. 1938, University of Florida; A.M. 1949, Ph.D. 1951, Northwestern University
- Peter Evans Brownback, *Associate Professorial Lecturer in Political Science*  
A.B. 1943, A.M. 1947, University of Alabama; Ph.D. 1952, University of Pennsylvania



- William Walter Brownholtz, *Associate Professorial Lecturer in Accounting*  
A.B. 1949, The George Washington University; C.P.A. 1959, State of Maryland
- James Leonard Buckler, *Professorial Lecturer in Accounting*  
A.B. in Govt. 1944, A.M. in Govt. 1950, The George Washington University
- Charles Stephen Bunker, *Lecturer in Business Administration*  
B.S. in B.A. 1958, Bowling Green State University; M.B.A. 1961, Indiana University
- James Franklin Burks, *Associate Professor of French*  
A.B. 1951, A.M. 1952, University of Cincinnati; Ph.D. 1957, Indiana University
- Leon Burnham, *Associate Professorial Lecturer in Business Administration*  
A.B. 1930, University of Utah
- Louise Burns, *Special Lecturer in the College of General Studies*  
A.B. 1940, Emmanuel College
- Vern Daniel Calloway, Jr., *Assistant Professorial Lecturer in Business Administration*  
A.B. 1951, LL.B. 1954, Duke University
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## ANNUAL ISSUES OF THE UNIVERSITY BULLETIN

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NATIONAL LAW CENTER, Dean of the Center

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SCHOOL OF ENGINEERING AND APPLIED SCIENCE, Dean of the School

UNDERGRADUATE AND GRADUATE CATALOGUE (Arts and Sciences, Education, Government and Business Administration, Public and International Affairs), Office of Admissions

SCHOOL OF MEDICINE, Admissions Office, School of Medicine

SUMMER SESSIONS, Dean of the Summer Sessions

SCHEDULE OF CLASSES: FALL AND SPRING SEMESTERS, Registrar

SCHEDULE OF CLASSES: SUMMER SESSIONS, Dean of the Summer Sessions

---

Jessie Bigelow Martin, A.B., *Editor of Academic Publications*



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GRADUATE SCHOOL OF ARTS AND SCIENCES: Master of Arts (A.M.), Master of Fine Arts (M.F.A.), Master of Music (Mus.M.), Master of Science (M.S.), and Doctor of Philosophy (Ph.D.)

SCHOOL OF MEDICINE: Doctor of Medicine (M.D.)

NATIONAL LAW CENTER: Bachelor of Laws (LL.B.), Master of Laws (LL.M.), Master of Comparative Law (M.Comp.L.), Master of Comparative Law (American Practice) (M.Comp.L.(Am.Prac.)), and Doctor of Juridical Science (S.J.D.)

SCHOOL OF ENGINEERING AND APPLIED SCIENCE: Bachelor of Science (Civil Engineering) (B.S. (C.E.)), Bachelor of Science (Electrical Engineering) (B.S. (E.E.)), Bachelor of Science (Measurement Science) (B.S. (Meas.S.)), Bachelor of Science (Mechanical Engineering) (B.S. (M.E.)), Master of Science (M.S.), Master of Engineering Administration (M.E.A.), and Doctor of Science (D.Sc.)

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SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS: Bachelor of Arts (A.B.), Certificate of the Institute for Sino-Soviet Studies (Cert. of I.S.S.S.), Master of Arts (A.M.), and Master of Science in International Affairs (M.S. in I.A.)



# THE GEORGE WASHINGTON UNIVERSITY

COLUMBIAN COLLEGE OF ARTS AND SCIENCES, 1821

THE GRADUATE SCHOOL OF ARTS AND SCIENCES, 1893

THE SCHOOL OF MEDICINE, 1825

THE NATIONAL LAW CENTER, 1865

THE SCHOOL OF ENGINEERING AND APPLIED SCIENCE, 1884

THE SCHOOL OF EDUCATION, 1907

THE SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION, 1928

THE SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS, 1928

THE COLLEGE OF GENERAL STUDIES, 1950

THE DIVISION OF UNIVERSITY STUDENTS, 1930

THE SUMMER SESSIONS, 1916

THE UNIVERSITY HOSPITAL, 1898



THE GEORGE WASHINGTON UNIVERSITY BULLETIN



SUMMER  
SESSIONS



1967



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tics, Health Care Administration, International Business, Personnel  
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Information concerning courses of instruction, programs, and faculty of several colleges and schools will be found in separate issues of the University Bulletin, which are listed on page 96. Zip code is essential for mailing inquiries.

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## A SUMMER SEMESTER IN THE NATION'S CAPITAL

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THE GEORGE WASHINGTON UNIVERSITY announces a two-term summer program which makes it possible for students to earn 14 semester hours of credit during the summer months. The Library, classrooms, and residence hall are air-conditioned. For courses offered at specific times, refer to the hourly schedule on pages at the back of this catalogue. For term dates, see the calendar on pages 5 and 6.

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# CALENDAR FOR THE 1967 SUMMER SESSIONS

**Application for Graduation**—Application for graduation must be filed and the appropriate fee paid at the time of registration for the summer session of the senior or final year. Students completing degree requirements during the Summer Sessions will be awarded diplomas (no formal convocation) September 30, 1967, provided they have completed all degree requirements and have applied for graduation as a part of registration for the Summer Sessions.

## COLUMBIAN COLLEGE OF ARTS AND SCIENCES

## GRADUATE SCHOOL OF ARTS AND SCIENCES

## SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION

## SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS

## DIVISION OF UNIVERSITY STUDENTS

### First Session

- June 12 Registration for first 5-week session and 8-week courses (10 am–8 pm) *Monday*
- June 12 Application for graduation due in Registrar's Office *Monday*
- June 13 First-session classes begin *Tuesday*
- July 4 Independence Day (holiday) *Tuesday*
- July 18 First-session classes end *Tuesday*
- July 19 First-session examination day *Wednesday*
- August 23 Master's theses completed in summer due in appropriate Dean's Office *Wednesday*

### Second Session

- July 20 Registration for second 5-week session (10 am–7 pm) *Thursday*
- July 20 Application for graduation due in Registrar's Office *Thursday*



## 6 THE SUMMER SESSIONS

- July 21 Second-session classes begin *Friday*  
 August 23 Master's theses completed in summer due in appropriate  
 Dean's Office *Wednesday*  
 August 24 Second-session classes end *Thursday*  
 August 25 Second-session examination day *Friday*

### NATIONAL LAW CENTER

- June 5 Registration for all sessions (11 am–7 pm) *Monday*  
 June 6 First- and 13-week sessions begin *Tuesday*  
 July 4 Independence Day (holiday) *Tuesday*  
 July 14 First-session classes end *Friday*  
 \* July 17–19 First-session examination period *Monday–Wednesday*  
 July 20 Registration for students attending 2d session only (11 am–  
 6 pm) *Thursday*  
 July 21 Second-session classes begin *Friday*  
 August 30 Last day of classes *Wednesday*  
 August 31–Sept. 2 Second and 13-week sessions examination period *Thursday–*  
*Saturday*

### SCHOOL OF EDUCATION

- June 12 First 3-week workshop session registration (10 am–8 pm)  
*Monday*  
 June 13 First 3-week workshop session classes begin *Tuesday*  
 June 30 First 3-week workshop session classes end *Friday*  
 July 1 National Teacher Examinations *Saturday*  
 July 3 Second 3-week workshop session registration (9 am–6 pm);  
 classes begin *Monday*  
 July 3 Six-week session registration (9 am–6 pm); classes begin  
*Monday*  
 July 4 Independence Day (holiday) *Tuesday*  
 July 7 Ed.D. and A.M. in Ed. July comprehensive examination  
 applications due *Friday*  
 July 21 Second 3-week workshop session classes end *Friday*  
 July 22 Ed.D. and A.M. in Ed. comprehensive examinations *Satur-*  
*day*  
 July 24 Third 3-week workshop session registration (9 am–5 pm);  
 classes begin *Monday*  
 August 11 Six-week session and third 3-week workshop session classes  
 end *Friday*

### FALL SEMESTER 1967

- September 12–13 Registration—*Tuesday–Wednesday*

\* Classes scheduled *Wednesday* evenings for the 13-week session will  
 meet on *Wednesday*, July 19.



## THE UNIVERSITY

### HISTORY AND ORGANIZATION

THE GEORGE WASHINGTON UNIVERSITY had its beginning in 1821 as The Columbian College in the District of Columbia. The name of the institution was changed in 1873 to Columbian University and in 1904 to The George Washington University. The debt of the University to George Washington, whose name it bears, is an intangible one.

George Washington, as President and as private citizen, had urgently insisted upon the establishment of a National University in the Federal City. There he hoped that, while being instructed in the arts and sciences, students from all parts of the country would acquire the habits of good citizenship, throwing off local prejudices and gaining at first hand a knowledge of the practice, as well as the theory, of republican government. To further the materialization of his hopes, Washington left a bequest of fifty shares of The Potomac Company "towards the endowment of a University to be established within the limits of the District of Columbia, under the auspices of the General Government, if that government should incline to extend a fostering hand towards it." The Congress never extended "a fostering hand." The Potomac Company passed out of existence, and Washington's bequest became worthless.

Fully conscious of Washington's hopes, but motivated primarily by a great missionary urge and the need for a learned clergy, a group of dedicated ministers and laymen sponsored a movement for the establishment of a college in the District of Columbia. Inspired largely by the zeal and energy of the Reverend Luther Rice, they raised funds for the purchase of a site and petitioned Congress for a charter. After much delay and amendment, Congress granted a charter which was approved by President Monroe on February 9, 1821. To safeguard the College's nonsectarian character it provided "that persons of every religious denomination shall be capable of being elected Trustees; nor shall any person, either as President, Professor, Tutor or pupil, be refused admittance into said College, or denied any of the privileges, immunities, or advantages therefore, for or on account of his sentiments in matters of religion."

During the entire time when the institution was known as Columbian College, its activities were centered on College Hill, a tract of forty-six and a half acres between the present Fourteenth and Fifteenth Streets extending north from Florida Avenue to somewhat beyond Columbia Road. The Medical School was located downtown. For the better part of the Columbian University period, the



buildings of the University were situated along H Street between Thirteenth and Fifteenth Streets. The Medical School group still remains there.

During the last half century the University's present plant has been developed in that section of the old First Ward familiarly known as "Foggy Bottom," between Nineteenth and Twenty-fourth Streets, south of Pennsylvania Avenue. Within a few squares are the White House, the Department of the Interior, the State Department, the World Bank, and many other governmental offices and international agencies. The area is not without its reminders of historic interest to the University. President Monroe, who signed the Charter, lived at 2017 Eye Street. The first President of the Board of Trustees, the Reverend Obadiah B. Brown, was for fifty years the pastor of a church at Nineteenth and Eye Streets, and Washington selected Twenty-third and E Streets as the site of the National University he had hoped to see established.

The University as it is now organized consists of Columbian College of Arts and Sciences, which offers work leading to Associate's and Bachelor's degrees; the Graduate School of Arts and Sciences, which offers work leading to Master's degrees and the degree of Doctor of Philosophy; the professional schools, which include the National Law Center and the schools of Medicine, Engineering and Applied Science, Education, Government and Business Administration, and Public and International Affairs; the College of General Studies; the Division of University Students; and the Summer Sessions.

The George Washington University is privately endowed and is governed by a self-perpetuating Board of Trustees of which the president is an *ex officio* member.

#### ACADEMIC STATUS

The George Washington University is accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools.

The University is on the approved list of the American Association of University Women and is a member of the College Entrance Examination Board.

The National Law Center is a charter member of the Association of American Law Schools and is approved by the Section of Legal Education and Admissions to the Bar of the American Bar Association. The School of Medicine is a member of the Association of American Medical Colleges and is one of the medical colleges which have been continuously approved by the American Medical Association. Curricula of the School of Engineering and Applied Science in Civil, Electrical, and Mechanical Engineering are accredited by the Engineer's Council for Professional Development. The School of Education is a charter member of the American Association of Colleges for Teacher Education and is accredited by the National Council for Accreditation of Teacher Education. The Department of Chemistry is on the approved list of the American Chemical Society.

#### EDUCATIONAL FACILITIES

*The University Library.*—The University Library contains approximately 435,900 volumes and, with the exception of the law and medical collections, is housed in the Library Building.



Regulations governing the use of the Library, the circulation of books, and the use of reserve books and periodicals are available at the service desks of the Library.

*Other Library Facilities in Washington.*—The student has access also to the Library of Congress, the Public Library of the District of Columbia and its branches, the Library of the Pan American Union, the Library of the Bureau of Railway Economics, the Library of the United States Department of Agriculture, the Library of the United States Office of Education, the National Library of Medicine, the Library of the Smithsonian Institution, and many other great special collections of the government departments.

*Research Facilities of Washington.*—The arrangement of the summer schedule of classes permits the full-time student to avail himself of the opportunity to study, at first hand, the working of the Federal Government and so to form a background for intelligent and useful citizenship.

In the departmental libraries of the Federal Government are a multitude of reports made by eminent specialists in all fields of science on the results of study and research in the bureaus, experimental stations, laboratories, museums, and observatories of the Nation.

In addition to the governmental collection the student has available the research facilities of such scientific and educational groups, whose headquarters are situated in Washington, as the Carnegie Institution, the American Council on Education, the National Academy of Sciences, the National Research Council, the National Education Association, and the National Geographic Society.

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## THE SUMMER SESSIONS

THE PROGRAMS OF THE SUMMER SESSIONS have been planned to meet the needs of full- and part-time students.

During the summer of 1967, Columbian College of Arts and Sciences, the Graduate School of Arts and Sciences, the School of Government and Business Administration, the School of Public and International Affairs, and the Division of University Students offer courses in two 5-week sessions, with some graduate seminars and courses extending over an 8-week period. The National Law Center offers courses in three sessions, and the School of Education offers courses in a 6-week session and three 3-week workshop sessions.

*The time at which each course is offered (session and hours) is stated at the end of the course description. For the convenience of the student an hourly schedule of classes, arranged by session, appears on pages 89-95.*

## Admission

### APPLICATION FOR ADMISSION OR READMISSION

THE APPLICATION FOR ADMISSION to degree candidacy should be accompanied by a \$25 application fee. There is no application fee for the student who is applying for nondegree status in the Division of University Students.

#### NONDEGREE STATUS

Application for nondegree status in the Division of University Students should be received, with any required credentials, by the Friday before the registration date of the session for which admission is sought (see Calendar, pages 5 and 6).

#### DEGREE CANDIDACY

Students from secondary schools wishing to begin college as degree candidates, in either the first or second term of the summer session, must submit application and all required credentials prior to March 1.



*Undergraduate transfer students from other institutions, applicants for graduate programs, and readmission applicants* must submit application and required credentials prior to May 1 for the first summer session and June 1 for the second summer session.

For admission to the National Law Center, see pages 26-28.

### APPLICATION FORMS

The tearout postcard form inside the back cover of this catalogue may be used to request the Dean of the Summer Sessions to furnish the appropriate form for admission or readmission to the University for nondegree status or for a degree program. When completed, the application should be mailed to the Office of Admissions. Students who attended the University in the spring semester of 1967 do not need to reapply to attend the Summer Sessions.

### THE STUDENT NOT SEEKING A DEGREE

The student not seeking a degree from this University should complete application for admission to the Division of University Students. (See paragraph above.) This nondegree-granting division makes the work of the University available to the following four types of applicants:

1. The student registered for a degree at another institution is admitted to the extent that facilities permit. No transcript of record is required.\*
2. The student over 21 years of age who is not working for a degree in this or another institution may be admitted to take courses for which he has adequate preparation, as determined by the department concerned. A transcript of record is not usually required.\*
3. Secondary school applicants under 21 years of age who have not attended a college or higher institution may be admitted if they meet the entrance requirements of Columbian College of Arts and Sciences (see pages 23-24).
4. Secondary school applicants under 21 years of age who have been accepted by a regionally accredited university or college for the fall semester of 1967 may be admitted for the *summer session only* without filing a transcript if they submit a photostatic copy of their unconditional letter of acceptance.

### THE STUDENT SEEKING A DEGREE

*An applicant from a secondary school* must (1) send to his high school principal the high school record form provided by the University, with the request that the completed form be mailed to the Office of Admissions; and (2) request a report of scores on the Scholastic Aptitude Test, the English Composition Achievement Test, and two additional achievement tests in subjects reflecting the applicant's major interests, from the Educational Testing Service, Princeton, N.J. 08540, or 1947 Center Street, Berkeley, Calif. 94704.

\* For admission to the Division of University Students the student must be in good standing and eligible to continue in the institution last attended during the past calendar year. No student is eligible for admission if he has been suspended within the past calendar year.



*An applicant who has attended one or more institutions of higher learning must request each registrar to mail to the Office of Admissions a transcript of his record, even though credits were not earned. An honorable dismissal is required from the institution last attended.*

The appropriate report of Graduate Record Examination, when available, should accompany application to graduate degree candidacy.

## Registration

A STUDENT MAY NOT REGISTER FOR CLASSES until the Office of Admissions has approved his admission to this University.

A student previously registered in this University who was not registered for campus courses during the spring semester preceding this registration must apply for and receive a letter of readmission from the Office of Admissions, before he is eligible for registration.

Registration days and hours are stated in the calendar at the front of this catalogue. All students except those in the National Law Center should report first to the Office of the Registrar, Building C, Room 104, 2029 G Street NW., where they will be given materials and detailed information concerning registration procedures. Bachelor of Laws degree candidates secure their registration packets and instructions at the Office of the Dean; candidates for graduate degrees in Law secure their registration packets and instructions at the Office of the Associate Dean for Graduate Studies.

Students planning to take courses in the first session and also in other sessions later in the summer may register at the first registration for *all* summer courses. Tuition for all courses is due and payable in full at the time of registration.

Students expecting to complete requirements for degrees during the Summer Sessions must apply for graduation as a part of registration for the Summer Sessions and pay the appropriate fee.

In special instances, with the permission of the instructor, a person who has been admitted to the University may be registered as an auditor in a class without being required to take active part in the exercises or to pass examinations. No academic credit will be allowed for such attendance. A student who takes a course as an auditor may not take the same course later for credit.

Summer Law students planning to take the New York Bar examination must register for both sessions, complete both, and carry a program of at least ten class periods a week (if day students) and at least eight class periods a week (if evening students). Students wishing to attend the second session only may register on July 20. Tuition fees are payable by the session.

## CHANGES IN PROGRAM OF STUDY

Changes in programs of study may be made only with the permission of the adviser or major professor and the dean or director of the college, school, or division concerned.



## Fees and Financial Regulations

THE FOLLOWING FEES have been adopted for the summer of 1967:

### Tuition Fees

For each semester hour\* (except for work taken by candidates for the degree of Doctor of Juridical Science and all other Doctoral candidates in residence in the University prior to the 1967 Summer Sessions) ..... \$57.00  
 Doctor of Juridical Science, including the final examination..... 1,625.00

### Additional Course Fees

In certain courses additional fees, such as laboratory and material fees, are charged as indicated in the course descriptions. These fees are due with the tuition fee for the course. Breakage of apparatus is charged against the individual student. When breakage is in excess of the normal amount provided for in the laboratory fee, the individual student will be required to pay such additional charges as are determined by the department concerned.

### Graduation Fees

Associate in Arts..... 10.00  
 Bachelor's, Master's, Education Specialist, and Doctor's degrees..... 25.00  
 Certificate of the Institute for Sino-Soviet Studies, Graduate Certificate in Health Care Administration..... 25.00  
 ..... 6.00

Fee for Binding Master's Thesis..... 55.00

Fee for Microfilm Service and Printing Abstract of Doctoral Dissertation

### Special Fees

Application fee (degree candidate) nonrefundable..... 25.00  
 Application fee, Unclassified Students in the National Law Center, non-refundable ..... 5.00  
 Admission tests (when required)..... 6.00-12.00  
 Late-registration fee, for failure to register within the designated period..... 15.00  
 Change fee, for each change in program: dropping or adding a course, changing from one section to another within a course, change of status (from auditor to credit status or vice versa), and change in credit hours for a course..... 2.00  
 Reinstatement fee, for reinstatement after financial suspension..... 10.00  
 For each examination to qualify for advanced standing and for each special examination ..... 5.00  
 English test for foreign students (when required)..... 5.00  
 Laboratory check-out fee, for failure to check out of chemistry laboratory by the date deadline set by the instructor..... 3.00  
 National Teacher Examinations fee, for Bachelor of Arts in Education degree candidates..... 9.00-13.00  
 Transcript fee, for each transcript of record..... 1.00  
 Withdrawal fee, charged in special cases..... 5.00

\* Candidates for doctoral degrees (except for the degree of Doctor of Juridical Science) in residence in the University prior to the 1967 Summer Sessions may complete their programs under the schedule for payment of tuition fees in effect prior to July 1, 1967. For tuition fee for the degree of Doctor of Juridical Science, see above.



Registration in the University entitles each student to the following University privileges: (1) the services of the Placement Office; (2) the use of the University Library; (3) medical attention and hospital services described on pages 18-19. These privileges terminate when the student withdraws or is dismissed from the University.

#### PAYMENT OF FEES

All fees are payable at the Office of the Cashier, 725 Twenty-first Street, N.W. No student is permitted to complete registration or to attend classes until all fees are paid. Fees for each session are due in advance at the time of registration.

An auditor pays all fees chargeable to the student registered for credit except the late-registration fee.

#### WITHDRAWALS AND REFUNDS

Registrations are for the session, and no refunds or rebates are allowed. In no case will tuition be refunded because of absence from classes.

Payments apply only to the session for which registration charges are incurred, and in no case will these payments be credited to another session or term.

Students in chemistry who fail to check out of the laboratory on or before the date set by the instructor, unless excused by the instructor, will be charged a \$3 check-out fee. A student who drops a course before the end of the session must check out of the laboratory at the next regular laboratory period.

Authorization to withdraw and certification for work done will not be given a student who has not a clear financial record.

### University Regulations

**STUDENTS IN THE SUMMER SESSIONS** are subject to the University regulations governing students enrolled during the academic year. Degree candidates are referred to the catalogues of the schools in which they are registered. Nondegree students should consult the Undergraduate and Graduate Catalogue.

**Academic Credit.**—The Summer Sessions are an integral part of the University. Academic credit for completed work will be given toward the appropriate degrees in the various colleges and schools of the University in accordance with their separate regulations and requirements.

**Residence.**—Summer Sessions work may be counted in residence but the candidate for a degree must satisfy the residence requirements of the school or college concerned.

**Amount of Work.**—No full-time student may take more than 7 semester hours of work during each 5-week session. No student employed more than 20 hours a week may take more than 4 semester hours of work during each 5-week session.

In the School of Education, 3 semester hours constitutes a full-time program for full-time students in any one of the 3-week workshop sessions, and 6 semester hours represents full-time work in the 6-week session.



In the National Law Center the maximum amount of work that may be taken in a session by a full-time student is 6 semester hours; by an employed student, 4 semester hours.

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable to do so.

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

The University is not responsible for the loss of personal property in any University building. A "Lost and Found" office is maintained in the Student Union.

## Student Services and Activities

### HEALTH SERVICES

THE HEALTH SERVICES STAFF assists students with their medical needs by advice and treatment, by proper referral when necessary, and by cooperation with other physicians. For medical emergencies and health consultations there is, on the campus, a Student Health Clinic open from 9 a.m. to 10 p.m., Monday through Friday, during the academic year and Summer Sessions, with physician and nurse in attendance. There is also a rest room for women, with a graduate nurse in charge. For night and week-end emergencies, students may go to the emergency room of the University Hospital for treatment. The basic fee for this visit will be paid by the Health Services, and all other charges will be the responsibility of the student. This arrangement is for emergency care only.

Medical privileges include: (1) physical examination\* of all applicants for courses in Physical Education who lack reports, approved by the Office of Health Services, of examinations by home physicians; (2) three visits in any one illness by a member of the Health Services Staff, office or residence (District of Columbia); (3) hospitalization, including board and nursing, in the University Hospital for not more than one week during any twelve-month period—the necessity to be determined by the Director of Health Services†. All additional hospital charges for operating room, anesthetics, laboratory, X-ray, medications, or any special services must be paid by the student. Expenses incurred for examinations and treatment by specialists, such as eye refraction and provision of glasses; orthopedic examinations and application of cast or other appliance; laboratory and X-ray work; and surgical operations must be paid by the student.

These medical benefits apply only to illness or disability incurred while currently enrolled in the University. They do not apply to illness or disability incurred between the last day of examinations for a semester or summer session and completion of registration for the next semester or summer session.

\* A charge for a special physical examination is made by the University if a student fails to appear for a physical examination during the period set for this purpose.

† See rule (5) for exception.



The student is allowed, if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

Rules: (1) the Director of Health Services is empowered to limit or deny the medical benefits where, in his discretion, a student has, by his misconduct or breach of the rules of the University, made himself ineligible; (2) the Director of Health Services has authority to determine the necessity and length of hospitalization; (3) a student not currently enrolled or one who has severed his connection with the University is ineligible for medical benefits; (4) a student intending to train for an athletic team is required to pass a thorough examination at the beginning of each semester; (5) hospitalization is not available to those students availing themselves of other hospitalization coverage for the same illness.

The University is not responsible for injuries received in intercollegiate or intramural games, or in any of the activities of the physical education departments.

#### HEALTH AND ACCIDENT INSURANCE

In addition to the above services, the Health Services Staff has arranged for Health and Accident Insurance, on an elective basis, for all full-time students. This policy covers the participant for 12 months, whether at home, at the University, or elsewhere.

Current yearly cost is \$26.40 payable at the fall registration. Arrangements can be made to pay in two installments of \$13.20 at the fall and spring registrations.

This policy contract is between the individual student and the insurance carrier and is accepted at any hospital or emergency room that accepts this type of medical work. Details of the policy are available at the Health Services Office.

#### THE READING CENTER

The Reading Center, 2018 Eye Street, N.W., offers individual diagnostic and corrective services for all levels: primary, elementary, secondary, and adult. In addition special reading improvement classes are conducted on the high school and adult level.

A complete diagnosis includes psychological tests; vision, hearing, and dominance tests; and the various reading and spelling tests. Results are interpreted and a written report is presented in conference with the parents or the individual.

The special reading classes for high school students and adults are offered throughout the year at stated intervals. Special classes for study skills and spelling are also available. Emphasis is placed on improvement of vocabulary, speed, comprehension, and study skills. Machines such as the tachistoscope, rate accelerator, and controlled reader are also used for increasing speed of comprehension.

*Reading Clinic.*—The fee for individual diagnosis is \$50; for individual instruction, \$7 a lesson; for semi-individual instruction, \$5 a lesson; for instruction in small groups with common reading difficulties, \$4.50 a lesson.



**Reading Improvement.**—Classes are offered for students on the high school, college, and graduate levels. Students are grouped according to needs; and emphasis is placed on vocabulary, study skills, spelling, and speed of comprehension. The fee for full-time students currently registered in the University is \$60 for twenty lessons; for other clients, \$90 for twenty lessons.

All fees are payable in advance at the Office of the Cashier.

#### PSYCHOLOGICAL CLINIC

The George Washington University Psychological Clinic, 718 Twenty-first Street, N.W., offers services which are available primarily to students enrolled in the University and secondarily to high school students and to adults in the community. The latter are selected by the Clinic in accordance with training and research interests of the Clinic Staff.

The services are designed to assist individuals in the evaluation of their educational, personal, and social lives; diagnose academic difficulties and provide remedial measures such as study habits instruction and programmed instruction; and refer individuals to qualified agencies for assistance with problems not handled by the Clinic. Individual psychotherapy is available.

The Clinic also provides special assessments including: diagnostic measures prescribed by the School of Engineering and Applied Science; admissions tests for the University and for other selected educational institutions, and some selected assessments for business and industry.

**Fees.**—For students who are currently registered as degree candidates in the University, the fee is \$10; for students currently enrolled in the University but not as degree candidates, the fee is \$40; for graduates of the University, \$40; for community clients, \$65. Fees for specialized testing are dependent upon the services involved. All fees are payable at the Office of the Clinic.

#### THE SPEECH AND HEARING CLINIC

The Speech and Hearing Clinic, Lisner Auditorium, 730 Twenty-first Street, N.W., offers diagnostic and corrective work for children and adults with such communication difficulties as stuttering, lisping, cleft palate, cerebral palsy, aphasia, foreign accent, voice, articulatory, and hearing problems.

**Fees.**—There is no charge for the initial diagnosis. The fee for individual instruction is \$10 an hour; for group instruction, \$5 an hour. Fees are payable at the Office of the Cashier.

#### VETERANS EDUCATION

The personnel of the Office of the Dean of Men act as advisers to veterans and war orphans and in a liaison capacity between the University and the Veterans Administration. This Office should be consulted concerning educational benefits before application is made to the Veterans Administration for certification. The Veterans Administration is at 2033 M Street, N.W., Washington, D.C. 20421.



### VETERANS' READJUSTMENT BENEFITS ACT (CHAPTER 34, TITLE 38, U.S. CODE)

A veteran who has served on active duty after January 31, 1955, or a person who is currently on active duty may be eligible for as much as 36 months of educational assistance under this act. Applications should be submitted to the Veterans Administration prior to registration.

### WAR ORPHANS' EDUCATIONAL ASSISTANCE ACT (CHAPTER 35, TITLE 38, U.S. CODE)

A child of a person who died of a disease or injury incurred or aggravated while on active duty in the Armed Forces, or a child of a person who has a permanent total disability resulting from such service, or a child of a person who died as a result of such a disability may be eligible for educational assistance under this act, if certain age requirements are met. In the case of a child who has not reached the age of majority, his guardian must make application for him to the Veterans Administration.

### VOCATIONAL REHABILITATION (CHAPTER 31, TITLE 38, U.S. CODE)

Disabled veterans desiring vocational rehabilitation under these laws should apply to the Veterans Administration for approval of their training objectives at least sixty days prior to registration.

### RESIDENCE HALL

Men, women, and married couples (no children) will be housed in the Women's Residence Hall, 1900 F Street, N.W. This is a modern, air-conditioned building.

Admission to the University does not include a room reservation. A separate application for a room should be made well in advance.

All unmarried freshman men and women and sophomore women under the age of 21 who are enrolled for six or more hours of academic work during a summer session are required to live in the University Residence Hall or at home with their parents or guardians. In exceptional cases permission to live elsewhere may be granted by the Dean of Men or Dean of Women.

### RESIDENCE HALL RATES FOR 1967 SUMMER SESSIONS \*

	Double Occupancy	Single Occupancy
Monthly .....		
Weekly .....	\$65.00	\$95.00
Daily .....	17.50	25.00
Each regular 5-week Session .....	5.00	5.00
	80.00	117.50

Residence hall payments are due and payable in advance. A student who fails to meet payment is subject to automatic suspension.

Forms for application, together with detailed information, may be obtained from the Dean of Men or the Dean of Women.

Information concerning off-campus housing near the University is available at the Office of the Dean of Men.

\* The rates include linen service.



**STUDENT UNION**

The Student Union, 2125 G Street, N.W., is the center for student life. From the cafeteria on the first floor to the reading room on the fourth floor, it is well planned to meet the students' need for meals, study, recreation, and activities. In addition to the recreation lounge and social lounge the Student Union provides office space for the Student Council and the other major student organizations.

The Student Activities Office, in the Student Union Annex, has information concerning the student organizations and campus events.

**STUDENT PLACEMENT OFFICE**

The Student Placement Office, 2114 G Street, N.W., provides assistance to degree candidates and alumni seeking full-time, part-time, temporary, or permanent employment.

The Office maintains a registry of positions available in many fields, both locally and nationally, and refers qualified applicants for consideration. The Office administers the On-Campus Industrial and Government Recruitment Interview Program for seniors and graduate students, in which private companies, government agencies, service organizations, public school systems, and universities participate. Prospective teachers may establish permanent credentials files in the Student Placement Office. This service includes files for alumni seeking college and university faculty and administrative positions. The Office also provides individual counseling for students and alumni wishing career guidance.

The Placement Office is open from 9:00 a.m. to 5:00 p.m., Monday through Friday.

**SOCIAL AND RECREATIONAL PROGRAM**

The social and recreational program includes many varied activities and scheduled events. In addition to this campus program a great abundance of cultural as well as social and recreational opportunities is available to persons living in the metropolitan area. During the summer the University posts a weekly guide to all these on a bulletin board in the Student Union.



## THE COLLEGES, SCHOOLS, AND DIVISIONS

INFORMATION CONCERNING SPECIFIC REQUIREMENTS for degrees is omitted from this catalogue. For such information, the student is referred to the catalogue of the school concerned.

### COLUMBIAN COLLEGE OF ARTS AND SCIENCES

Incoming liberal arts and science freshmen and all transfer students of less than junior class standing are registered in the lower division of Columbian College of Arts and Sciences. The lower division also provides the first two years of the prelegal and premedical programs; the preprofessional work required for admission to the School of Education, the School of Government and Business Administration, the School of Public and International Affairs; and a two-year terminal curriculum in Accounting. The lower division is primarily concerned with providing (1) the personal and academic guidance needed by beginning college students and (2) the broad cultural foundations in language and literature, science, and social studies on which major field specialization in the upper division is built.

The upper division of Columbian College offers programs leading to Bachelor's degrees in the liberal arts and sciences.

### THE DEGREES

Columbian College offers work leading to the following degrees: Associate in Arts, Bachelor of Arts, and Bachelor of Science. In cooperation with the School of Medicine, Columbian College offers work leading to the combined degrees of Bachelor of Arts and Doctor of Medicine. In cooperation with the Department of Pathology and the University Hospital, Columbian College offers work leading to the degree of Bachelor of Science in Medical Technology.

### ENTRANCE REQUIREMENTS\*

Requirements for admission to the freshman class are as follows:

1. An acceptable certificate of graduation from an accredited secondary school, showing at least fifteen units which must include four years of English;

\*Entrance requirements are established by the faculties of the several colleges, schools, and divisions. The Office of Admissions, as agent for the faculties, administers regulations governing admission, admission, and transfer.



at least two years of one foreign language; two years of science, preferably with laboratory instruction; two years of social studies, one of which must be American history; and two years of college preparatory mathematics. It is to be noted that one unit of algebra, or the equivalent, is prerequisite to courses in chemistry and statistics, and that one unit in algebra and one unit in plane geometry, or the equivalent, are prerequisite to courses in mathematics and physics.

2. The principal's statement that the applicant is prepared to undertake college work.

3. College Entrance Examination Board scores, which must be submitted on the Scholastic Aptitude Test, the English Composition Achievement Test, and two additional achievement tests in subjects reflecting the applicant's major interests.

A person who does not present all of the formal requirements stated above may request the Office of Admissions to present his case to the Columbian College Committee on Admission and Advanced Standing. The Committee may prescribe appropriate tests.

The applicant is responsible for:

- a. Sending the report form obtained from the Office of Admissions to his principal who will complete the form and forward it directly to the Office of Admissions.
- b. Requesting a report of scores on the Scholastic Aptitude Test and the achievement tests to be sent to the Office of Admissions by the Educational Testing Service, 20 Nassau Street, Princeton, N.J. 08540, or 1947 Center Street, Berkeley, Calif. 94704. Write directly to the Board for information as to testing dates, fees, and center locations.

#### MAJOR FIELDS

Curricula leading to the degree of Bachelor of Arts are available in the following major fields:

American Thought and Civilization  
 Anthropology  
 Art History and Theory  
 Biology  
 Botany  
 Chemistry  
 Classical Archeology and Greek  
 Dramatic Art  
 Economics  
 English Literature  
 Fine Arts  
 French Language and Literature  
 Geography  
 Geology  
 Germanic Languages and Literatures  
 History  
 Journalism  
 Latin  
 Latin American Civilization

Mathematical Statistics  
 Mathematics  
 Music:  
   Music History and Literature  
   Music Theory  
   Applied Music  
 Philosophy  
 Physics  
 Political Science  
 Psychology  
 Religion  
 Russian Language and Literature  
 Sociology  
 Spanish American Literature  
 Spanish Language and Literature  
 Speech  
 Speech Pathology and Audiology  
 Zoology

Curricula leading to the degree of Bachelor of Science are available in the following major fields:



Biology  
Botany  
Chemistry  
Geology

Mathematical Statistics  
Mathematics  
Physics  
Zoology

### THE GRADUATE SCHOOL OF ARTS AND SCIENCES

The Graduate School offers work leading to the following degrees: Master of Arts, Master of Fine Arts, Master of Music, Master of Science, and Doctor of Philosophy. In cooperation with the School of Medicine, the Graduate School offers work leading to the combined degrees of Master of Science and Doctor of Medicine. Only a limited number of graduate courses in arts and sciences are offered during the Summer Sessions.

#### ENTRANCE REQUIREMENTS

The entering graduate student must have an approved Bachelor's degree from an accredited higher institution, an appropriate distribution of courses, and a superior quality of work in the major field.

#### GRADUATE FIELDS

Subject	Degrees Offered
I. Humanities	
American Literary and Cultural History	A.M.
American Literature	Ph.D.
American Thought and Culture	Ph.D.
Applied Music	Mus.M.
Art History and Criticism	A.M.
Ceramics	M.F.A.
Conducting	Mus.M.
Dramatic Art	M.F.A.
English Literature	A.M. Ph.D.
English and American Literature	A.M.
French Language and Literature	A.M. Ph.D.
Germanic Languages and Literatures	A.M. Ph.D.
Graphics	M.F.A.
Linguistics	A.M.
Museology	A.M.
Music Composition	Mus.M.
Music Theory	Mus.M.
Painting	M.F.A.
Philosophy	A.M.
Religion	A.M.
Religious Education	A.M.
Russian Language and Literature	A.M.
Sculpture	M.F.A.
Spanish American Literature	A.M.
Spanish Language and Literature	A.M. Ph.D.



**II. Social Sciences**

Anthropology	A.M.	
Economics	A.M.	Ph.D.
Geography	A.M.	
History	A.M.	Ph.D.
International Relations		Ph.D.
Latin American Civilization	A.M.	
Political Science	A.M.	Ph.D.
Sociology	A.M.	

**III. Physical and Mathematical Sciences**

Applied Statistics	M.S.	
Chemistry	M.S.	Ph.D.
Geochemistry	M.S.	Ph.D.
Geology	A.M., M.S.	Ph.D.
Mathematical Statistics	A.M.	Ph.D.
Mathematics	A.M.	Ph.D.
Physics	M.S.	Ph.D.

**IV. Biomedical and Related Sciences**

Anatomy	M.S.	Ph.D.
Biochemistry	M.S.	Ph.D.
*Biological Sciences	M.S.	Ph.D.
Biophysics		Ph.D.
Human Ecology		Ph.D.
Microbiology	M.S.	Ph.D.
Pathology		Ph.D.
Pharmacology	M.S.	Ph.D.
Physiology	M.S.	Ph.D.
Psychology	A.M.	Ph.D.
Speech Pathology and Audiology	A.M.	

**THE NATIONAL LAW CENTER**

The National Law Center offers work leading to the degrees of Bachelor of Laws, Master of Laws, Master of Comparative Law, Master of Comparative Law (American Practice), and Doctor of Juridical Science.

Forms for application for admission to the Bachelor of Laws degree program may be obtained from the Office of the Dean, 720 Twentieth Street, N.W., Washington, D. C. 20006.

Forms for application for admission to graduate study may be obtained from the Office of the Associate Dean for Graduate Studies, 2000 H Street, N.W., Washington, D.C. 20006.

Applications should be accompanied by an application fee of \$25 for a degree candidate, \$5 for an unclassified student. Two recent signed photographs must accompany the application.

See "Registration," page 15, for provisions applicable to students who plan to take the New York Bar examination.

\* Biology, Botany, and Zoology.



## ENTRANCE REQUIREMENTS

*Unclassified Students.*—A degree candidate with an above average record at another law school which is a member of the Association of American Law Schools or is approved by the American Bar Association may, at the discretion of the Dean, be admitted to the Law Center as an unclassified student to earn credits for transfer to the other law school. Unclassified students must previously have completed at least one year of law school work.

A member of the bar or a person, not a member of the bar, who is a graduate of a member school of the Association of American Law Schools or a law school approved by the American Bar Association may, at the discretion of the Dean, be admitted to graduate study as an unclassified student.

Unclassified students participate in the work of the course and take examinations. Courses taken by unclassified students will not be credited toward degrees at the Law Center.

*For the Degree of Bachelor of Laws.*—Students from other law schools which are members of the Association of American Law Schools or are approved by the American Bar Association may apply for transfer to this Law Center with advanced standing. *No new students are admitted as candidates for the degree of Bachelor of Laws in the summer term.*

*For the Degree of Master of Laws.*—The following are required: a Bachelor of Arts or equivalent degree from an approved college or university\* and a Bachelor of Laws or equivalent degree from a law school which is a member of the Association of American Law Schools or is approved by the American Bar Association. Candidates for admission must have attained a *B* average on all work done for the Bachelor of Laws degree, except that at the discretion of the Faculty of the National Law Center, an applicant otherwise eligible may be accepted upon providing evidence (such as high class standing, *Law Review* experience, positions held, and professional achievements) of ability to do graduate level work. Advanced standing will not be granted for credits earned while a candidate for the first degree in law or for credits earned at another law school. Credits earned as an unclassified student will not be applicable toward meeting the requirements for the degree unless specific provision therefor is included in the letter of admission.

*For the Degree of Master of Comparative Law and Master of Comparative Law (American Practice).*—The following are required: (1) the successful completion of and graduation from a course in arts, philosophy, letters, or sciences, equivalent to graduation from a gymnasium, lycee, or liceo; and (2) graduation in law from a recognized foreign university where training was in Civil Law.

*For the Degree of Doctor of Juridical Science.*—The following are required: a Bachelor of Arts or equivalent degree from an approved college or university;\* a Bachelor of Laws or equivalent degree, earned with high rank, from a law school which is a member of the Association of American Law Schools or is approved by the American Bar Association; and outstanding capacity for scholarly work in the field of law. In addition, the applicant must submit an outline of a proposed dissertation topic. This outline should be in some detail, indicating by chapters and divisions within chapters the exact scope of the project. There should also be a bibliography for each chapter listing books, reports, cases, and *Law Review* articles, or notes to be considered. Although such an

\*The Dean is authorized to make exceptions in appropriate cases.



outline cannot predict every detail of the subsequent research, it must be sufficiently definite to afford the Faculty a basis for evaluating the project.

*Continuing Legal Education Students.*—A simplified admission and registration procedure is used for members of the bar who wish to take courses on a noncredit basis.

### THE SCHOOL OF EDUCATION

The School of Education prepares teachers, counselors, and administrators for the higher ranges of educational service and offers opportunities to teachers of experience to extend their education. The schedule of courses is arranged to meet the needs of employed students as well as those able to devote full time to their studies. It offers both graduate and undergraduate work.

### THE DEGREES

The School of Education offers work leading to the following degrees: Bachelor of Arts in Education, Bachelor of Science in Physical Education, Master of Arts in Education, Education Specialist, and Doctor of Education.

### ENTRANCE REQUIREMENTS

*For the Bachelor's Degrees.*—The satisfactory completion of two years of approved college work, or graduation from an approved two-year normal school, or the equivalent, is required.

*For the Master's Degree.*—A Bachelor's degree from an accredited college, or the equivalent, a score on a required aptitude examination, and the approval of the Committee on Admission and Advanced Standing are required.

*For the Degree of Education Specialist.*—(1) The degree of Master of Arts in Education from this University or the equivalent from another accredited institution of higher learning, (2) a satisfactory score on the Graduate Record Examination, and (3) at least two years of successful pertinent experience. The applicant who is unable to meet the admission requirements may be admitted with deficiencies to be met by satisfactorily completing prerequisites in addition to the specified program of graduate study. Each applicant must be interviewed and recommended for admission by a staff member of the School of Education, or by a representative in the candidate's locality appointed by the Dean.

*For the Doctor's Degree.*—The applicant must possess adequate preparation for advanced study including graduate work in fields prerequisite to his objective equivalent to that required for the degree of Master of Arts in Education at this University, at least three years of successful pertinent educational experience, acceptable personal qualities, and capacity for creative scholarship and effective leadership.

### THE SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION

The School of Government and Business Administration offers work leading to the following degrees: (1) Bachelor of Business Administration with a major in



Accounting, Business Administration, Business and Economic Statistics, or International Business; (2) Master of Arts in Government in the fields of Business and Economic Statistics, Personnel Administration, Public Administration, or Urban and Regional Planning; (3) Master of Business Administration in the fields of Accounting, Business Administration, Health Care Administration, International Business, or Personnel Administration; (4) Master of Public Administration in the fields of Health Care Administration, Personnel Administration, Public Administration, or Urban and Regional Planning; (5) Graduate Certificate in Health Care Administration (post-Master's study); (6) Doctor of Business Administration; and (7) Doctor of Public Administration.

#### ENTRANCE REQUIREMENTS FOR THE BACHELOR'S DEGREE

*Bachelor of Business Administration.*—The satisfactory completion of the *Accounting* and *Business Administration* or the *Business and Economic Statistics* curriculum in the lower division of Columbian College of Arts and Sciences, or the equivalent.

#### ENTRANCE REQUIREMENTS FOR THE MASTER'S DEGREES

A Bachelor's degree from an accredited college or university is required.

Students admitted to candidacy must have attained a quality-point index of 3.00 (a B average) in the relevant undergraduate fields.

#### MASTER OF ARTS IN GOVERNMENT

*In the field of Business and Economic Statistics.*—An undergraduate major in business and economic statistics, or the equivalent.

*In the field of Personnel Administration.*—An undergraduate major in a social science or education, with appropriate courses in psychology.

*In the field of Public Administration.*—An undergraduate major in a social science or business administration, or equivalent work experience.

*In the field of Urban and Regional Planning.*—A Bachelor's degree from an accredited college or university and aptitude for urban and regional planning.

#### MASTER OF BUSINESS ADMINISTRATION

Applicants for admission to Master's study in Business Administration must submit scores on the Admission Test for Graduate Study in Business administered by the Educational Testing Service.

*In the field of Accounting, Business Administration, or International Business.*—A Bachelor's degree from an accredited college or university.

In the program of automatic data processing appropriate courses in mathematics are required.

*In the field of Health Care Administration.*—A Bachelor's degree from an accredited college or university. In the selection of candidates consideration will be given to personal qualifications, aptitude for health care administration, and practical experience.



*In the field of Personnel Administration.*—An undergraduate major in a social science or education, with appropriate courses in psychology.

#### MASTER OF PUBLIC ADMINISTRATION

Applicants for admission to programs leading to the degree of Master of Public Administration must submit scores on the Admission Test for Graduate Study in Business or the Graduate Record Examination administered by the Educational Testing Service.

*In the field of Health Care Administration.*—A Bachelor's degree from an accredited college or university. In the selection of candidates consideration is given to personal qualifications, aptitude for health care administration, and practical experience.

*In the field of Personnel Administration.*—An undergraduate major in a social science or education, with appropriate courses in psychology.

*In the field of Public Administration.*—A Bachelor's degree from an accredited college or university.

*In the field of Urban and Regional Planning.*—A Bachelor's degree from an accredited college or university and aptitude for urban and regional planning.

#### ENTRANCE REQUIREMENTS FOR THE DOCTOR'S DEGREES

*Doctor of Business Administration.*—The degree of Master of Business Administration, Master of Arts in an approved field, or the equivalent, together with acceptable personal qualities and a capacity for creative scholarship. Applicants must file results of the Admission Test for Graduate Study in Business administered by the Educational Testing Service. Each applicant must demonstrate his competence by qualifying examination in statistics and accounting.

*Doctor of Public Administration.*—The degree of Master of Public Administration, Master of Arts in an approved field, or the equivalent, together with acceptable personal qualities and a capacity for creative scholarship. Each applicant must demonstrate his competence by qualifying examination in two tools of research, chosen as the program dictates.

#### THE SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS

The School of Public and International Affairs offers work leading to the degrees of Bachelor of Arts with a major in International Affairs or Public Affairs, Master of Arts in the field of International Affairs or Public Affairs, and the Certificate of the Institute for Sino-Soviet Studies.

#### ENTRANCE REQUIREMENTS FOR THE BACHELOR OF ARTS DEGREE

*With a major in International Affairs or Public Affairs.*—The satisfactory completion of the International Affairs or Public Affairs curriculum in the lower division of Columbian College of Arts and Sciences, or the equivalent.



**ENTRANCE REQUIREMENTS FOR THE MASTER OF ARTS DEGREE**

A Bachelor's degree from an accredited college or university is required. Students admitted to candidacy must have attained a quality-point index of 3.00 (a B average) in the relevant undergraduate fields.

*In the field of International Affairs.*—The applicant's undergraduate program should include background courses corresponding to an undergraduate major in international affairs at this University.

*In the field of Public Affairs.*—An undergraduate major in public affairs, economics, history, or political science, depending on the field of specialization.

**THE COLLEGE OF GENERAL STUDIES**

The College of General Studies supplements the adult education program of the University through Off-Campus Study; Campus Study; Conferences, Seminars, and Special Projects; and Continuing Education and Noncredit Programs. This College offers programs leading to the degrees of Bachelor of Science in General Studies, Bachelor of Science in Geodetic and Cartographic Science, Bachelor of Business Administration, Master of Science in Financial Management, Master of Science in Governmental Administration, Master of Science in Personnel Administration, Master of Science in International Affairs, Master of Science in Business Administration, and Master of Science in Public Administration.

**ENTRANCE REQUIREMENTS**

*Off-Campus Credit Courses.*—A simplified procedure is used for admission and registration in off-campus courses. Transcripts of previous academic work are not required. Registration is restricted to those whose qualifications would indicate that they are able to carry the course successfully. Admission to an off-campus course does not constitute admission to degree candidacy in the University.

*Noncredit Courses.*—In general, noncredit courses will be open to any individual interested in enrolling. When a noncredit course is organized at the request of some particular agency or group, admission may be restricted to the students recommended by the sponsoring organization. A limit on the size of classes may have to be imposed in order to maintain the quality of instruction.

The separate catalogue of the College of General Studies, available at the College, 706 Twentieth Street, N.W., Washington, D.C. 20006, contains full information concerning programs, courses, entrance and degree requirements, and fees.

**THE DIVISION OF UNIVERSITY STUDENTS**

The Division of University Students makes the work of the University, in its several colleges and schools, accessible to four types of students who are not working toward a degree in this University (see page 13).



## SPECIAL PROGRAMS AND WORKSHOPS

THE SUMMER SESSIONS is pleased to announce a carefully planned group of special programs and workshops devised to serve a variety of student needs and to utilize resources which are uniquely present at the University and in the Nation's Capital. These programs, which are described below, have been developed in the area of the humanities and in the area of social studies. They all have a strong academic orientation and will be taught by the regular faculty of the University or distinguished visitors from other institutions.

### American Studies

#### SECOND SESSION

THIS PROGRAM will center on courses taught by two distinguished visiting professors. William R. Taylor, author of *Cavalier and Yankee: the Old South and the National Character* and an intellectual historian at the University of Wisconsin, will bring to the classroom the observations produced by his active research interests. James Dickey, an experienced teacher as well as one of the most exciting poetic talents of the last decade, will explore contemporary activity in his own creative field. Mr. Dickey was Consultant in Poetry at the Library of Congress during 1966-67; his latest volume is *Buckdancer's Choice*.

These courses may be taken for graduate credit with the approval of the instructor and the student's adviser. Detailed information is available at the Office of the Dean of the Summer Sessions.

#### AMERICAN THOUGHT AND CIVILIZATION

##### 120 The Urbanization of American Intellectual Life (3)

Changing patterns of individual, family, and community life as reflected in the literature of 19th century America. **Second Session: MTWThF**  
8:10-9:30 am.

Taylor

#### ENGLISH

##### 169 Recent English and American Literature (3)

A study of the social and imaginative problems and characteristics of modern verse as raised by a selective reading of recent English and American poets. **Second Session: MTWThF 1:10-2:30 pm.**

Dickey



## Art Program in Scandinavia

### MID-JUNE TO MID-AUGUST

THE DEPARTMENT OF ART, in conjunction with the Experiment in International Living, has arranged a 6-week summer program in Denmark. In addition to living in Danish homes while studying, the participants will take field trips to appropriate industrial workshops of leading Scandinavian craft industries in Copenhagen, Oslo, and Stockholm. Assistant Professor Douglas Harold Teller, assisted by Workshop Lecturer Frits Moltke-Hoff, a native of Copenhagen, will lead the program.

Detailed information concerning the Program in Art is available at the Office of the Dean of the Summer Sessions.

#### ART

#### 140 Design Workshop (3)

Moltke-Hoff

Study of the craft techniques and workshop practices in the field of furniture design, silversmithing, ceramics, rug and fabric design found in the workshops of leading Scandinavian craft industries in Copenhagen, Oslo, and Stockholm. No studio fee.

#### 249 Theory of Design (3)

Teller

Application of design principles to painting, architecture, sculpture, and minor arts of today, with comparative reference to American and Scandinavian sources.

## Communist Affairs

THE INSTITUTE FOR SINO-SOVIET STUDIES is again offering a program of related courses focused on the theory of communism and its political operation in Eastern Europe and Asia. These courses are broad enough to have general appeal as electives for the liberal arts student and sufficiently specific to have vocational utility for the teacher of social studies. Regular faculty members will offer five courses in this program, three in the first session and two in the second. Each course carries 3 semester hours of credit. Students majoring in Political Science should consult with their advisers before registering for this work.

Detailed information is available in the Office of the Dean of the Summer Sessions.

The following faculty will staff the courses in this program:

Andrew Gyorgy, Professor of International Affairs

Harold Clendenin Hinton, Associate Professor of International Affairs

Charles Fox Elliott, Assistant Professor of Political Science and International Affairs



FIRST SESSION—JUNE 12 TO JULY 19

POLITICAL SCIENCE

160 Modern Communist Ideologies (3)

Intensive study of 20th century communism with emphasis on its antecedents and possible evolution. Backgrounds, careers, and ideas of leading communist figures: Marx, Lenin, Stalin, Khrushchev, and Mao. MTWThF 11:10 am–12:30 pm. Gyorgy

161 Soviet Government and Politics (3)

Analysis of influences in formation of the Soviet system under Lenin, Stalin, and Khrushchev; Soviet Communist Party; government and mass organizations; selected aspects of economic, cultural, social, and foreign policy. MTWThF 7:30–8:50 pm. Elliott

162 Government and Politics of China (3)

The Chinese Communist Revolution: Chinese tradition, modern Chinese history, Marxism-Leninism and Soviet influence, rise of the Communist Party of China. Principal power structures: party, Bureaucracy, armed forces, police. Major domestic and foreign objectives and policies. MTWThF 8:10–9:30 am. Hinton

SECOND SESSION—JULY 20 TO AUGUST 25

HISTORY

137 History of Soviet Foreign Policy (3)

Russian foreign policy since 1917. Continuity between Tsarist and Soviet foreign policy, relation between state diplomacy and communist ideologies, disarmament, international organization, etc. MTWThF 7:30–8:50 pm. Elliott

POLITICAL SCIENCE

115 Government and Politics in Eastern Europe (3)

Study of contemporary social and ethnic structures, governmental systems, and international position of East European satellites. Emphasis on post-World War II political evolution and present status of Soviet satellite nations. MTWThF 11:10 am–12:30 pm. Gyorgy

Dance Workshop

JUNE 12 TO JUNE 30

THE DEPARTMENT OF PHYSICAL EDUCATION, HEALTH, AND RECREATION FOR WOMEN is offering, under the direction of Professor Elizabeth Burtner and Assistant Professor Maida Withers, a 3-week Modern Dance Workshop that will feature a number of guest artist-teachers. This coeducational program will be



open both to graduate and undergraduate students with previous experience in dance technique and a background in dance composition. From 1 to 3 hours of credit may be earned in this program.

Additional information may be obtained from Professor Elizabeth Burtner, Building J, The George Washington University.

#### PHYSICAL EDUCATION

##### 56 Dance Technique and Theory (1)

Advanced work in the techniques of contemporary modern dance. Prerequisite: the introductory and intermediate dance electives offered in Physical Education 1-2 and 11-12, or equivalent. MTWThF 9:40-11 am.

##### 110 Dance Composition II (1 to 2)

Advanced problems in composition. MTWThF 1:10-2:30 pm.

##### 120 Repertory (1)

Study and performance of completed dance works. MTWThF 3-4 pm.

### Language Study in France

JUNE 18 TO AUGUST 26

THE DEPARTMENT OF ROMANCE LANGUAGES AND LITERATURES, in conjunction with the Experiment in International Living, has arranged for this summer its third 8-week language program in France led by Associate Professor Joseph L. Metivier, Jr. The program will include intensive training in conversation and composition, living with a French family, weekend excursions to chateaux, museums, and places of historical and cultural interest. Students will also spend 8 days in Paris.

Participants are required to take both French 11 and French 53. Prerequisite: two years of college French with grades of B or better.

Detailed information concerning this program is available at the Office of the Dean of the Summer Sessions.

#### FRENCH

##### 11 Composition (Honors Program) (3)

Intensive 6-week program in written and oral composition. Classes meet for a total of 7½ hours a week. Course offered only in summer sessions abroad. (This is an honors program in French stylistics.) Final examinations in written and oral composition.

##### 53 Conversation and Civilization (3)

Intensive 6-week conversation course based on advanced readings in French culture and civilization. Classes meet for a total of 7½ hours a week. Course offered only in summer sessions abroad.



## Language Study in Spain

JUNE 28 TO AUGUST 26

THE DEPARTMENT OF ROMANCE LANGUAGES AND LITERATURES, in conjunction with the Experiment in International Living, has arranged an 8-week language program in Spain to be led by Associate Professor Guido E. Mazzeo. The program will include intensive training in conversation and composition, homestay with a Spanish family, weekend excursions, an extended trip, and a one-week stay in Madrid.

Participants are required to take both Spanish 11 and Spanish 53.

Detailed information concerning this program is available at the Office of the Dean of the Summer Sessions.

### SPANISH

#### 11 Conversation and Composition (Honors Program) (3)

Intensive program in written and oral composition. Offered only in summer sessions abroad. Final examinations in written and oral composition.

#### 53 History and Civilization (3)

Intensive course including lectures and advanced readings in Spanish culture and civilization. Course offered only in summer sessions abroad.

## Workshop in Producing Shakespeare

JUNE 12 TO AUGUST 31

### SPEECH AND DRAMA

#### 157 Workshop in Producing Shakespeare (2)

Participation as an apprentice in minor role or technical work with an Equity Company in the Shakespeare Summer Festival production in the outdoor Sylvan Theatre at the Washington Monument. Hours arranged with Company rehearsals and performances. Registration limited. Application must be made by May 15. (For detailed information write Shakespeare Summer Festival, Cleveland Park Station, Box 4991, Washington, D. C. 20008.)



## COURSES OF INSTRUCTION

### EXPLANATION OF COURSE NUMBERS

*First-group courses.*—Courses numbered from 1 to 100 are planned for students in the freshman and sophomore years. With the approval of the adviser and the Dean, they may also be taken by juniors and seniors. In certain instances, they may be taken by graduate students to make up undergraduate deficiencies or as prerequisite to advanced courses, but they may not be credited toward a higher degree.

*Second-group courses.*—Courses numbered from 101 to 200 are planned for students in the junior and senior years. They may be credited toward higher degrees only when registration for graduate credit has been approved at the beginning of the course by the dean responsible for the graduate work and by the instructor and when the completion of additional work has been certified by the instructor.

*Third-group courses.*—Courses numbered from 201 to 300 (in the Graduate School of Arts and Sciences, the School of Government and Business Administration, and the School of Public and International Affairs), courses numbered 201 to 400 (in the School of Education) are planned primarily for graduate students. They are open, with the approval of the instructor, to qualified seniors; they are not open to other undergraduates.

*Fourth-group courses.*—Courses numbered 301 to 400 in the Graduate School of Arts and Sciences are limited to graduate students; but they are primarily for doctoral candidates. In the School of Education fourth-group courses, numbered 401 to 500, are limited to graduate students with Master's degrees from accredited institutions.

### INDICATION OF THE AMOUNT OF CREDIT

The number of hours of credit given for the satisfactory completion of a course is in most cases indicated in parentheses after the name of the course.

The Schedule of Classes for the Summer Sessions, which will be available in April at the Office of the Registrar, will contain information about room assignments and instructors for courses.

The University reserves the right to change or withdraw any of the following courses.



## Accounting

E.J.B. Lewis, *Chairman*

### 1-2 Introductory Accounting (3-3)

Preparation, uses, and limitations of financial reports. Accounting 1: fundamentals of data accumulation and processing. Accounting 2: introduction to managerial accounting—financial programming, cost determination, and analysis of financial statements. Accounting 1 is prerequisite to Accounting 2. **First Session:** Accounting 1A—MTWThF 9:40-11 am; Accounting 1B—MTWThF 6-7:20 pm. **Second Session:** Accounting 2—MTWThF 6-7:20 pm.

### 111 Financial Statement Analysis (3)

Methods and techniques of preparing, analyzing, and interpreting financial statements for the guidance of operating executives, directors, stockholders, and creditors. Prerequisite: 6 semester hours of accounting or permission of instructor. **First Session:** MTWThF 7:30-8:50 pm.

### \*115 Survey of Accounting (3)

Preparation, uses, and limitations of financial information in the management process. Not open for credit to Accounting majors. **First Session:** Section A; **Second Session:** Section B. MTWThF 6-7:20 pm.

### 121 Intermediate Accounting (3)

Accounting for assets and liabilities. Prerequisite: Accounting 1-2 or permission of instructor. **June 13 to August 4:** MWF 6-7:25 pm.

### 132 Accounting Theory (3)

Development of basic accounting principles and concepts; review of current thought as reflected in the pronouncements of leading professional and accounting research associations; major contributions to accounting literature. Prerequisite: 6 semester hours of accounting. **Second Session:** MTWThF 6-7:20 pm.

### 193 Business Budgeting (3)

Principles, techniques, and procedures involved in the development, installation, and operation of a system of budgetary control to aid in the management of commercial and industrial organizations. Prerequisite: Accounting 1-2. **Second Session:** MTWThF 7:30-8:50 pm.

### †215A Survey of Managerial Accounting (3)

Nature, preparation, analysis, and interpretation of accounting reports; cost accounting, business budgeting, and internal accounting controls and their use in the management process. Prerequisite: Accounting 1-2 or 115 or permission of instructor. Not available for credit to students who have credit for former Accounting 211-12. **Second Session:** MWF 8:10-10 pm.

### 275 Internal Control and Auditing (3)

Internal accounting controls and review and appraisal of accounting systems, procedures, and managerial policies with respect to their effectiveness.

\* A special section of this course, Accounting 115C, for students in the Navy Graduate Financial Management Program, will be offered June 5 to July 28: hours to be arranged.

† A special section of this course, Accounting 215B, for students in the Navy Graduate Financial Management Program, will be offered June 5 to July 28: hours to be arranged.



ness and profitableness. Prerequisite: Accounting 171 or permission of instructor. **June 13 to August 4:** TTh 6:10–8 pm.

**299 Thesis Seminar (3)**

**First Session:** hours to be arranged.

**300 Thesis (3)**

**Second Session:** hours to be arranged.

## American Thought and Civilization

Administered by the Department of English, J.P. Reesing, Jr., *Chairman*

**120 The Urbanization of American Intellectual Life (3)**

**Second Session:** MTWThF 8:10–9:30 am. (See program in American Studies, page 32.)

## Anthropology

P.F. Gallagher, *Chairman*

**1 Introductory Anthropology (3)**

Survey of man's origin, physical evolution, and culture history. **First Session:** MTWThF 9:40–11 am.

**153 Psychological Anthropology (3)**

Relevance of psychoanalytic theories to the cross-cultural study of personality. Cultural determinants of personality formation and mental health.

**First Session:** MTWThF 11:10 am–12:30 pm.

**299 Thesis (3)**

**First Session.**

## Art

D.C. Kline, *Chairman*

### ART HISTORY AND THEORY

**1 Art Appreciation (3)**

Language and function of art in its various media; development of styles, aesthetic principles, theories, and the ideas in art through the ages. Primarily for nonmajors. **First Session:** Section A; **Second Session:** Section B. MTWThF 1:10–2:30 pm.



**31-32 Survey of Western Art (3-3)**

Survey of the arts in the Western World from prehistoric to modern times. A foundation for further study in the history of art. **First Session:** Art 31; **Second Session:** Art 32. MTWThF 9:40-11 am.

**71-72 Introduction to the Arts in America (3-3)**

Painting, sculpture, and architecture of America, with selected references to crafts and popular arts. Art 71: from Colonial beginnings to the Republican Age. Art 72: from early 19th century to the present. **First Session:** Art 71; **Second Session:** Art 72. MTWThF 11:10 am-12:30 pm.

**101 Greek and Roman Architecture (3)**

**First Session:** MTWThF 11:10 am-12:30 pm.

**105 Renaissance Art in Italy II (3)**

High Renaissance and Mannerism.

**Second Session:** MTWThF 9:40-11 am.

**107 Renaissance Art in the North II (3)**

Sixteenth century painting in the Netherlands, Germany, France, Spain, and Portugal. **First Session:** MTWThF 8:10-9:30 am.

**109 19th Century Art in Europe (3)**

Painting and sculpture from Academism to Symbolism.

**Second Session:** MTWThF 11:10 am-12:30 pm.

**113 Baroque Art in Italy (3)**

Development of painting, sculpture, and architecture in 16th and 17th century Italy. **Second Session:** MTWThF 1:10-2:30 pm.

**114 Baroque Art in the North (3)**

Development in painting, sculpture, and architecture in the 16th and 17th centuries in Holland, Flanders, Spain, France, Germany, and England. **First Session:** MTWThF 9:40-11 am.

**118 Medieval Art II (3)**

Architecture, sculpture, and painting of the Romanesque and Gothic periods. **Second Session:** MTWThF 4:10-5:30 pm.

**149 19th Century American Sculpture (3)**

**Second Session:** MTWThF 8:10-9:30 am.

**261 Art Theory and Criticism (3)**

History of theory and criticism; area of concentration selected from Classical, Medieval, Renaissance, and Modern fields. **First Session:** MTWThF 1:10-2:30 pm.

**271-72 Museum Techniques (6-6)**

Intern training in museum work. Prerequisite: Art 146. **First Session:** Art 271; **Second Session:** Art 272. Hours to be arranged.

**289-90 Thesis (3-3)**

**Both Sessions:** hours to be arranged.



## FINE ARTS \*

41-42 **Drawing I** (3-3) CSA

Introductory course including traditional and contemporary techniques, mechanical and visual perspective. **First Session:** Art 41 and 42. MTWThF 9-12 am.

51-52 **Ceramics I** (3-3) CSA

Basic techniques for clay preparation, hand forming, wheel throwing, and the application of slip glazes and vitreous glazes, through workshop and illustrated lectures. Laboratory fee: Art 51, \$25; Art 52, \$25. **First Session:** Art 51 and 52. MTWThF 9-12 am.

61 **Watercolor** (3) CSA

Sketching as a basis for color composition; study of techniques and styles. **First Session:** MTWThF 9-12 am.

65-66 **Painting I** (3-3) CSA

Basic color composition and fundamental painting techniques. **First Session:** Art 65 and 66. MTWThF 9-12 am.

81-82 **Sculpture I** (3-3) CSA

Armature building, clay and plaster modeling, casting techniques. **First Session:** Art 81 and 82. MTWThF 9-12 am.

123-24 **Design: Individual Problems** (3-3)

Emphasis on the individual student and the problems and materials that specifically interest him in any area of design. Prerequisite: Art 121-22. **Second Session:** Art 123 and 124. MTWThF 9-12 am.

125-26 **Painting II** (3-3) CSA

Development of basic concepts carried into personal statement. **First Session:** Art 125 and 126. MTWThF 1-4 pm.

127-28 **Painting III** (3-3) CSA

Exploratory efforts in the development of style, using advanced methods and materials. **First Session:** Art 127 and 128. MTWThF 1-4 pm.

131-32 **Ceramics II** (3-3) CSA

Basic techniques in clay and glaze formation, advanced wheel throwing and hand forming. Laboratory fee: Art 131, \$30; Art 132, \$30. **First Session:** Art 131 and 132. MTWThF 1-4 pm.

137-38 **Painting Workshop** (3-3) CSA

Study of painting techniques and media used by old masters and contemporary artists. **First Session:** Art 137 and 138. MTWThF 1-4 pm.

140 **Design Workshop** (3)

(See Art Program in Scandinavia, page 33.)

143-44 **Serigraphy** (3-3)

Advanced problems in serigraphy; emphasis on its aesthetic possibilities. Studio fee: Art 143, \$10; Art, 144, \$10. Prerequisite: Art 57-58. **First Session:** Art 143—MTWThF 9-12 am; Art 144—MTWThF 1-4 pm.

\* Courses designated CSA are taught at the Corcoran School of Art.



153-54 **Etching** (3-3)

Prerequisite: Art 57-58.  
ThF 9-12 am.

Second Session: Art 153 and 154. MTWThF 9-12 am.

157-58 **Relief Printing** (3-3) CSA

Relief printing and wood block; special reference to Eastern techniques.  
First Session: Art 157 and 158. MTWThF 1-4 pm.

163-64 **Welding** (3-3)

Special problems in welded sculpture. Material fee: Art 163, \$10; Art 164, \$10. Second Session: Art 163 and 164. MTWThF 1-4 pm.

179-80 **Sculpture II** (3-3) CSA

Three-dimensional compositions, bas-relief techniques. Basic principles of wood and stone carving. First Session: Art 179 and 180. MTWThF 9-12 am.

189-90 **Sculpture III** (3-3) CSA

Advanced problems in sculpture as related to architecture.  
First Session: Art 189 and 190. MTWThF 9-12 am.

First Ses-

249 **Theory of Design** (3)

(See Art Program in Scandinavia, page 33.)

265-66 **Painting IV** (3-3) CSA

First Session: Art 265 and 266. MTWThF 1-4 pm.

275 **Painting V** (3) CSA

First Session: MTWThF 1-4 pm.

279-80 **Sculpture IV** (3-3) CSA

First Session: Art 279 and 280. MTWThF 9-12 am.

281 **Sculpture V** (3) CSA

First Session: MTWThF 9-12 am.

299-300 **Thesis** (3-3)

Both Sessions: hours to be arranged.

## Biological Sciences

I.B. Hansen, *Chairman*

\*1-2 **Introductory Biology** (4-4)

Introductory course leading to all second- and third-group courses in biology, botany, and zoology; also provides the nonscience student with an understanding of the life sciences. First Session: Biological Sciences 1; Second Session: Biological Sciences 2. Section A—MTWThF 9:40 am-1 pm; Section B—MTWThF 6-9:20 pm.

\* Biological Sciences 1-2 is prerequisite to all second-group courses except by permission of instructor.



**127 Genetics (3)**

Introductory course dealing with both nuclear and nonnuclear organisms, covering the nature, transmission, and functioning of the genetic material. **First Session:** MTWThF 6-7:20 pm.

**145 Introduction to Vertebrate Embryology (3)**

Origin and early development of the individual, formation of organ systems. Emphasis on the frog, chick, and pig, with reference to the human embryo. Material fee, \$8. **Second Session:** MTWThF 6-8:50 pm.

**148 Histology (4)**

Introduction to the microscopical anatomy of normal tissues and organs. Material fee, \$8. **First Session:** MTWThF 6-9:20 pm.

**295 Research (arr.)**

Investigation of special problems. May be repeated for credit. **First Session:** Section A; **Second Session:** Section B. Hours to be arranged.

**299-300 Thesis (3-3)**

**First Session:** Biological Sciences 299; **Second Session:** Biological Sciences 300. Hours to be arranged.

## Business Administration

H.R. Page, *Chairman*

**51 Introduction to Business (3)**

The business environment; its effects upon the decision-making process. **First Session:** MTWThF 1:10-2:30 pm.

**102 Fundamentals of Management (3)**

Planning, organizing, directing, coordinating, and controlling the activities of the administrative unit; evolution of management thinking. **Second Session:** MTWThF 6-7:20 pm.

**105 Personnel Management (3)**

The labor force and labor markets. Industrial personnel and manpower programs, organizations and policy in personnel activities. **First Session:** MTWThF 6-7:20 pm.

**118 Introduction to Data Processing (3)**

Basic principles and methods of data processing. Introduction to the fundamentals, potentials, and problems of automatic data processing for management information systems. **First Session:** MTWThF 4:10-5:30 pm.

**131 Business Finance (3)**

Basic principles involved in the financing of business enterprises. Prerequisite: Accounting 1-2. **Second Session:** MTWThF 4:10-5:30 pm.

**141 Basic Marketing Management (3)**

Introduction to marketing and marketing management in relation to our total economy and business management, consumer and demand analysis, retailing, wholesaling, major marketing management problems and poli-



- cies with particular emphasis on major decision areas and tools. Prerequisite: Economics 1-2. **First Session:** MTWThF 11:10 am-12:30 pm.
- 191 Business Reports and Analyses (3)**  
Sources of management information, array and analysis of data, interpretation and presentation of findings. **First Session:** MTWThF 6-7:20 pm.
- 208 Personnel Management and Industrial Relations (3)**  
(Formerly Business Administration 211)  
For students in the Air Force Advanced Management Program only. Survey of personnel management practices and procedures, including labor-management relations. **July 31 to September 8:** hours to be arranged.
- 209 Seminar: Personnel Management (3)**  
Discussion of industrial personnel and manpower management, and research in advanced problems. **Second Session:** MWF 6:10-8 pm.
- 232 Seminar: Business Finance (3)**  
Research in advanced financial problems. **Second Session:** MWF 6:10-8 pm.
- 241 Advanced Marketing Management (3)**  
Marketing management problems and policies in major decision areas of product planning, channels of distribution, advertising, personal selling, sales promotion, pricing, and development of integrated marketing programs. Case analysis. **First Session:** MWF 6:10-8 pm.
- 273 Readings in Business (3)**  
Advanced readings in the fields of finance, marketing, and personnel management. Admission by permission of instructor. May be repeated for credit. **First Session:** MWF 6:10-8 pm.
- 290 Research Seminar: Management (3)**  
For students in the Air Force Advanced Management Program only. **June 5 to July 28:** hours to be arranged.
- 299 Thesis Seminar (3)**  
Examination of thesis standards, research philosophy, and methodology. **First Session:** MWF 8:10-10 pm.
- 300 Thesis (3)**  
**Second Session:** hours to be arranged.



## Business and Public Administration

Administered by the Department of Business Administration, H.R. Page,  
Chairman

### \*201 Advanced Administrative Management (3)

Advanced course in administration emphasizing principles and practices common to administrative units of all kinds. **First Session:** Section A; **Second Session:** Section B. MWF 8:10-10 pm.

### 207 Human Behavior in Organizations (3)

(Formerly Human Factors in Administration)

Individual, group, intergroup, and other human behavior and development; application of social science research to administration. Practical applications emphasized. **Second Session:** MWF 6:10-8 pm.

### 221 Management Information Systems Development and Application (3)

Analysis and design of management information systems; integration of data processing in operations of government or business, impact on management organization and decision making. Prerequisite: Business and Public Administration 218, 219, or permission of instructor. **First Session:** MWF 6:10-8 pm.

### 268 Management Engineering (3)

Analysis of the techniques for initiation and implementation of management engineering programs; emphasis on organization and methods surveys, including work measurement, work simplification, management audits, and other management improvement programs. Not open to students who have taken Business and Public Administration 269. **Second Session:** MWF 6:10-8 pm.

### 287 Relation of Government to Business (3)

Activities of government in relation to business management in areas of labor relations, wages, production, and prices. Trend and change in economic activity and its bearing upon government policy. **First Session:** MWF 6:10-8 pm.

## Chemistry

C.R. Naeser, Chairman

### 11-12 General Chemistry (4-4)

A year course: credit given on completion of Chemistry 12. Elementary course in general chemistry including qualitative analysis. Prerequisite: one year of high school algebra. Laboratory fee, \$18 each session.

**First Session:** Chemistry 11; **Second Session:** Chemistry 12. MWF 8:10 am-1 pm; TTh 8:10-11:10 am.

\* A special section of this course, Business and Public Administration 201C, for students in the Air Force Advanced Management Program, will be offered July 31 to September 8: hours to be arranged. A second special section, Business and Public Administration 201D, for students in the Navy Graduate Financial Management Program, will be offered July 31 to September 8: hours to be arranged.



**22 Elementary Quantitative Analysis (4)**

Theory and practice of quantitative analysis by classical volumetric and gravimetric methods and introduction to instrumental analysis. Prerequisite: Chemistry 12 or 15. Laboratory fee, \$18. **First Session:** MTWThF 8:10 am–12:30 pm.

**51–52 Organic Chemistry (4–5)**

A year course: credit given on completion of Chemistry 52. Chemistry of the compounds of carbon. Prerequisite: Chemistry 12 or 15. Laboratory fee: Chemistry 51, \$12; Chemistry 52, \$20. **First Session:** Chemistry 51—MTWThF 8:10 am–12:30 pm; **Second Session:** Chemistry 52—MTWThF 8:10 am–1:30 pm.

**111 Physical Chemistry (3)**

Gas Laws, chemical thermodynamics, solution chemistry, chemical equilibria, and other topics. Prerequisite: Chemistry 22; Mathematics 22; Physics 1, 2. **First Session:** MTWThF 6–7:20 pm.

**112 Physical Chemistry (3)**

Chemical kinetics, chemical statistics, electrochemistry, and other topics. Prerequisite: Chemistry 111. **Second Session:** MTWThF 6–7:20 pm.

**295 Research (arr.)**

Research on problems approved by the staff. Open to qualified students with advanced training. May be repeated once for credit. Laboratory fee, \$7.50 a semester hour. **First Session:** Section A; **Second Session:** Section B. Hours and credits to be arranged.

**299–300 Thesis (3–3)**

Laboratory fee, \$18 each session. **First Session:** Chemistry 299; **Second Session:** Chemistry 300. Hours to be arranged.

**Chinese (Mandarin)**

Administered by the Department of Slavic and Oriental Languages and Literatures, Helen Yakobson, *Chairman*

**1–2 First-year Chinese (3–3)**

A year course: credit given on completion of Chinese 2. For beginners. Pronunciation, conversation, reading, writing basic Chinese characters. Aural training, oral practice in language laboratory. Laboratory fee, \$17.50 each session. **First Session:** Chinese 1; **Second Session:** Chinese 2. Lecture MTWThF 6–7:20 pm; laboratory.\*

\* For laboratory sections, see the Hourly Schedule, pages 89–95. All First Session language laboratories begin June 15.



## Classical Languages and Literatures

J.F. Latimer, *Chairman*

### 1-2 First-year Latin (3-3)

A year course: credit given on completion of Latin 2. Functional presentation of the essentials of the language, appropriate reading selections, development of English derivatives, introduction to Roman life and literature. **First Session:** Latin 1; **Second Session:** Latin 2. MTWThF 9:40-11 am.

### 17-18 Introduction to Homeric Greek (3-3)

A year course: credit given on completion of Greek 18. Forms and syntax of Homeric Greek. Appropriate reading selections. **First Session:** Greek 17; **Second Session:** Greek 18. MTWThF 9:40-11 am.

### 109 Greek and Roman Tragedy (in English) (2 to 3)

Selections from Aeschylus, Sophocles, Euripides, and Seneca. **First Session:** MTWThF 11:10 am-12:30 pm.

### 110 Greek and Roman Comedy (in English) (2 to 3)

Selected plays of Aristophanes, Menander, Plautus, and Terence. **Second Session:** MTWThF 11:10 am-12:30 pm.

### 124 Literary and Scientific Etymology (in English) (2 to 3)

Derivation and formation of English words stemming from Greek and Latin. **First Session:** Section A—MTWThF 11:10 am-12:30 pm. **Second Session:** Section B—MTWThF 9:40-11 am.

## Economics \*

C.E. Galbreath, *Chairman*

### 1-2 Principles of Economics (3-3)

Survey of the major economic principles, institutions, and problems in contemporary life. Economics 1 is prerequisite to Economics 2.

**First Session:** Economics 1 Section A—MTWThF 9:40-11 am, Section B—MTWThF 6-7:20 pm. **Second Session:** Economics 1 Section C—MTWThF 1:10-2:30 pm; Economics 2 Section A—MTWThF 9:40-11 am, Section B—MTWThF 6-7:20 pm.

### 101 Intermediate Microeconomic Theory (3)

(Formerly *Economic Analysis*)

Analysis of supply, demand, and pricing. **First Session:** MTWThF 8:10-9:30 am.

### 102 Intermediate Macroeconomic Theory (3)

(Formerly *Economic Analysis*)

Theories of national income determination and growth. **Second Session:** MTWThF 11:10 am-12:30 pm.

\* Economics 1-2 is prerequisite to all other courses in Economics.



**121 Money and Banking (3)**

Principles of money and banking, operation of commercial banking systems and the Federal Reserve System. **Second Session:** MTWThF 6-7:20 pm.

**181 International Economics (3)**

Fundamentals of the monetary theory and the price theory of international trade. **First Session:** MTWThF 11:10 am-12:30 pm.

**195 Governmental and Industrial Economics (3)**

For students in the Navy Graduate Financial Management Program. **June 5 to July 28:** hours to be arranged.

**217 Survey of Economics (3)**

For graduate students in fields other than Economics; not open to graduate students in Economics. Price theory. **First Session:** MWThF 6:10-8 pm.

**299-300 Thesis (3-3)**

**First Session:** Economics 299 and 300A; **Second Session:** Economics 300B. Hours to be arranged.

## Education \*

B.S. Root, *Chairman*

See also courses in Physical Education and Recreation, pages 71-73, and in Special Education, pages 83-85.

### FIRST 3-WEEK WORKSHOP SESSION—JUNE 12 TO JUNE 30

Classes meet Monday through Friday. Each workshop course requires the full day; concurrent registration for another daytime course is not permitted. June 12 to 16—small group discussions, evening; June 19 to 30—small group discussion and field work, afternoon.

**108 Human Development, Learning, and Teaching (3)**

Principles of effective teaching based on an understanding of human development and the nature of learning. Prerequisite: Psychology 22. **A six-week course: June 12 to July 21—lecture MW 6:40-9 pm; conference 6-6:40 pm.**

**112A Educational Measurement (3)**

Scope, needs, services to students, selection and construction of teacher-made tests, interpretation of tests for evidence purposes. Prerequisite: Education 108 and 123. **June 12 to 16: lecture 3:45-5:45 pm. June 19 to 30: lecture 10:10-12 am; conference 9:10-10 am.**

\*A degree from an accredited institution is prerequisite to all courses numbered from 201 to 400.



**\*116 Elementary School Social Studies (3)**

Content, methods, materials, and activities essential in the elementary school curriculum. Prerequisite: Education 108 and 123, or teaching experience. **June 12 to 16:** lecture 3:45-5:45 pm. **June 19 to 30:** lecture 8:10-10 am; conference 10:10-11 am.

**\*120 Elementary School Mathematics (3)**

Content, methods, materials, concepts of "new mathematics," and activities essential in the elementary school curriculum. Prerequisite: Education 108 and 123, or teaching experience. **June 12 to 16:** lecture 3:45-5:45 pm. **June 19 to 30:** lecture 8:10-10 am; conference 10:10-11 am.

**137 Teaching Speech (3)**

Prerequisite: Education 108, 123, and 131; 18 semester hours in speech or permission of instructor. **June 12 to 16:** lecture 3:45-5:45 pm. **June 19 to 30:** lecture 10:10-12 am; conference 9:10-10 am.

**214 History of Education (3)**

Evolution of the American school system. **June 12 to 16:** lecture 3:45-5:45 pm. **June 19 to 30:** lecture 10:10-12 am; conference 9:10-10 am.

**†219 Elementary School Classroom Procedures (3)**

Current classroom practices; emphasis on planning, unit teaching, techniques in discipline; individual and group evaluation techniques, resources for learning, providing for individual differences. **June 12 to 16:** lecture 3:45-5:45 pm. **June 19 to 30:** lecture 8:10-10 am; conference 10:10-11 am.

**245 School and Community (3)**

The school as an important member of a team of social agencies that builds the community. **June 12 to 16:** lecture 3:45-5:45 pm. **June 19 to 30:** lecture 10:10-12 am; conference 9:10-10 am.

**†251 Foundations of Guidance and Personnel Services (3)**

(Formerly *Guidance in Elementary and Secondary Schools*)

Introductory survey: definitions, scope, principles, historical background, organization, services, emerging trends, and issues. **June 12 to 16:** lecture 3:45-5:45 pm. **June 19 to 30:** lecture 8:10-10 am; conference 10:10-11 am.

**†255 Secondary Education (3)**

Current proposals for improvement of secondary education. **June 12 to 16:** lecture 3:45-5:45 pm. **June 19 to 30:** lecture 8:10-10 am; conference 10:10-11 am.

**357 Mental Hygiene (3)**

(Formerly *Seminar: Psychology of Adjustment and Mental Hygiene*)

Mental health problems; emphasis on needs of counselors, teachers, and others working with children and adolescents. **June 12 to 16:** lecture 3:45-5:45 pm. **June 19 to 30:** lecture 10:10-12 am; conference 9:10-10 am.

\* This course may not be taken by students who have completed or plan to enroll in Education 111.  
† Prerequisite: adequate professional preparation.



**380 Sensitivity Training: Laboratory Method (3)**

A sensitivity learning experience in human relations using unstructured group experience, individual feedback, experimentation, and practice.

**June 12 to 23:** lecture and laboratory 9:10-12 am and 1:10-5 pm.

**June 26 to 30:** individual projects as assigned and conference.

**Psyc 22A Introduction to Educational Psychology (3)**

Consideration of individual and group differences, adjustments, and the psychology of learning in relation to education and training.

**June 12 to 16:** lecture 3:45-5:45 pm. **June 19 to 30:** lecture 10:10-12 am; conference 9:10-10 am.

**SECOND 3-WEEK WORKSHOP SESSION—JULY 3 TO JULY 21**

Classes meet Monday through Friday. Concurrent registration for another day-time course is not permitted, because each workshop course requires the full day—lecture and conference in the morning; small group discussion and field work in the afternoon.

**113 Elementary School Art (3)**

For undergraduates in the elementary school curriculum. Materials and methods. Prerequisite: Psychology 1 and 22. Material fee, \$4.50. Lecture 10:10-12 am; conference 9:10-10 am.

**\*115 Elementary School Teaching of Reading (3)**

Introduction to methods, techniques, materials, and activities essential to a good elementary school reading program. Prerequisite: Education 108 and 123, or teaching experience. Lecture 10:10-12 am; conference 9:10-10 am.

**138 Teaching Social Studies in Secondary Schools (3)**

Prerequisite: Education 108, 123, 131, and 24 semester hours of social studies. Lecture 8:10-10 am; conference 10:10-11 am.

**†207 Curriculum Materials (3)**

For experienced teachers. Construction of courses of study, and classroom teaching aids, with direct application to students' own situations. Lecture 8:10-10 am; conference 10:10-11 am.

**†223 Reading Problems (3)**

Elementary and secondary school reading difficulties; classroom and clinical techniques in solving reading problems. Prerequisite: one or more years of recent teaching experience. Lecture 10:10-12 am; conference 9:10-10 am.

**†243 Human Relations in the Classroom (3)**

Principles and practices involved in interpersonal relationships between learner and teacher and among learners. Lecture 10:10-12 am; conference 9:10-10 am.

\* This course may not be taken by students who have completed or plan to enroll in Education 111.  
† Prerequisite: adequate professional preparation.



**253 Analysis of the Individual for Purposes of Counseling (3)**

Detailed study of individual analysis and appraisal techniques. Development of systematic case study. Prerequisite: Education 112 or equivalent. Lecture 8:10-10 am; conference 10:10-11 am.

**\*256 Secondary Education (3)**

Current problems in each subject-matter field. Lecture 8:10-10 am; conference 10:10-11 am.

**257 Educational and Occupational Development (3)**

Theories of career development; structure of education, training, and work in the United States; sources, forms, collection, evaluation, and dissemination of educational-occupational information. Lecture 8:10-10 am; conference 10:10-11 am.

**\*285 Student Activities (3)**

Nature and purposes of selected activities—homeroom, clubs, assemblies, school publications, student council, interscholastic contest; particular attention to sponsorship, participation, finance, and evaluation. Lecture 10:10-12 am; conference 9:10-10 am.

**352 Advanced Career Development (3)**

Advanced workshop for experienced counselors; theory and uses of new educational media in guidance; field study of job opportunities in area business, industry, and government agencies. Lecture 1:10-3 pm; field-work 9:10-12 am.

**THIRD 3-WEEK WORKSHOP SESSION—JULY 24 TO AUGUST 11**

Classes meet Monday through Friday. Concurrent registration for another day-time course is not permitted, because each workshop course requires the full day—lecture and conference in the morning; small group discussion and field work or laboratory in the afternoon.

**114 Elementary School Music (3)**

For undergraduates in the elementary school curriculum. Materials and methods. Prerequisite: Psychology 1 and 22. Lecture 10:10-12 am; conference 9:10-10 am.

**117 Elementary School Science (3)**

Content, methods, materials, and activities, essential in the elementary school curriculum. Prerequisite: Education 108 and 123, or teaching experience. Lecture 8:10-10 am; conference 10:10-11 am.

**†128 Children's Literature (3)**

Newer books for children and the children's classics, contribution of literature to child development, children's original expressions. Prerequisite: Psychology 1 and 22. Lecture 8:10-10 am; conference 10:10-11 am.

\* Prerequisite: adequate professional preparation.  
† This course may not be taken by students who have completed or plan to enroll in Education 111.



**\*208 Human Development (3)**

Contribution of various disciplines to an understanding of human development throughout the life span; emphasis on practical implications of relevant research. Lecture 8:10–10 am; conference 10:10–11 am.

**\*216 Education of Slow-learning Children (3)**

Identification, nature, and needs of slow-learning elementary and junior high school children. Emphasis on diagnosis and treatment of learning difficulties. Lecture 8:10–10 am; conference 10:10–11 am.

**\*231 Secondary School Classroom Procedures (3)**

Current classroom practices: teacher-pupil planning, group procedures, initiatory and culminating activities, individual and group evaluation techniques, teaching aids, etc.; review of recent literature. Lecture 8:10–10 am; conference 10:10–11 am.

**\*241 Education of the Gifted (3)**

For classroom teachers. Nature and discovery of giftedness, provisions for the gifted in regular classes, experimental projects. Lecture 10:10–12 am; conference 9:10–10 am.

**258 Techniques of Counseling (3)**

Intensive study of educational and psychological processes involved in counseling interviews. Vocational, educational, and personal counseling problems. Prerequisite: 12 semester hours in testing and guidance, including Education 253 and 257. In exceptional cases Education 253 or 257 may be taken concurrently with 258. Lecture 10:10–12 am; conference 9:10–10 am.

**\*272 The Teacher and School Supervision (3)**

Nature, organization, human relationships, and techniques. Lecture 10:10–12 am; conference 9:10–10 am.

**SIX-WEEK SESSION—JULY 3 TO AUGUST 11****†123 Society and the School (3)**

Historical and social development of education at local, national, and international levels; cooperation of the school with other community agencies; functions of school personnel. TTh 6:40–9 pm; conference 6–6:40 pm.

**\* †212 Educational Measurement (3)**

Basic measurement techniques; construction, selection, administration, and interpretation of objective and essay-type examinations; statistical analysis of test results; laboratory use of test instruments. TTh 6:40–9 pm; conference 6–6:40 pm.

**\*217 Philosophy of Education (3)**

To help students formulate a personal philosophy of education. MTW ThF 11–12 am; two conferences to be arranged.

\* Prerequisite: adequate professional preparation.

† Enrollees fully employed may not register for another course.



\* †221 **Early Childhood Education (3)**

Philosophy, class organization, equipment, methods, and materials which promote growth needs of four- to seven-year olds. TTh 6:40-9 pm; conference 6-6:40 pm.

†229 **Administration of Elementary Education (3)**

For experienced teachers and administrators. Achieving instructional objectives, organizing and servicing teaching activities, coordinating school and community life. TTh 1-3:20 pm; conference MWF 1-2 pm.

\* †233 **Audio-visual Education (3)**

Selection, evaluation, and use of audio-visual materials; administrative problems in care, operation, maintenance, and use of such materials and equipment. Material fee, \$7. MW 6:40-9 pm; two conference hours to be arranged.

\* †259 **Secondary School Administration (3)**

For experienced teachers and administrators with two years of secondary school teaching. Survey of administration including practices of the modern high school. MW 6:40-9 pm; two conference hours to be arranged.

†261 **Practicum in Guidance (3)**

Supervised practical instruction. Prerequisite: graduate work in counseling. Admission by permission of the Department Chairman. MTWThF 1-2 pm; two conference hours to be arranged.

\* †271 **The Teacher and School Administration (3)**

Role of federal, state, and local administrative units; school finance; legal controls; school plant; public support; improving teaching conditions. TTh 4:10-6 pm; two conference hours to be arranged.

\* †279 **Adult Education (3)**

Current concepts and objectives, agencies involved, programs on all levels—international through community. TTh 6:40-9 pm; two conference hours to be arranged.

293-94 **Research (3-3)**

Individual research under guidance of a staff member. Program and conferences arranged with an instructor. Hours to be arranged.

†295 **Research Methods and Procedures (3)**

Required of all candidates for graduate degrees in Education. To be taken early in the graduate program. Prerequisite: elementary course in statistics. Section A: MTWThF 1-2 pm; two conference hours to be arranged. Section B\*: MW 6:40-9 pm; two conference hours to be arranged.

\* †297 **Personnel Administration (3)**

Organization and administration of personnel programs for educational institutions. Basic philosophy, principles, responsibilities, and functions. TTh 6:40-9 pm; two conference hours to be arranged.

\* Enrollees fully employed may not register for another course.  
† Prerequisite: adequate professional preparation.



299-300 Thesis (3-3)

Required of Master of Arts in Education candidates writing Master's theses.

\* †301 Data Processing in Education (3)

Machine accounting and computer technology for counselors, teachers, and administrators. MW 6:40-9 pm; two conference hours to be arranged.

SPECIAL PROGRAM IN ELEMENTARY TEACHER EDUCATION

107 Elementary School Teaching Foundations (9)

A block course, dealing with the content of traditional courses in educational psychology; history of education; human development, learning, and teaching; society and the school; introduction to elementary education. One hundred and thirty-five class hours, supplemented by field experience. MTWThF 9-12 am; field work—afternoon.

‡112B Educational Measurement (3)

Scope, needs, services to students, selection and construction of teacher-made tests, interpretation of tests for evidence purposes. Prerequisite: Education 108 and 123. MW 1-3 pm.

## English

J.P. Reesing, Jr., *Chairman*

### ENGLISH COMPOSITIONS

#### A English for Foreign Students (3)

Reading and writing to assist the foreign student in overcoming deficiencies in the use of English. Special attention to spelling, syntax, grammar, idiom, and vocabulary. **First Session:** MTWThF 6-7:20 pm.

#### B English for Foreign Students (3)

For second-semester foreign students not ready for English 1. Writing of expository paragraphs and themes; outlining; reading for comprehension, vocabulary, and style. **First Session:** MTWThF 7:30-8:50 pm.

\* Enrollees fully employed may not register for another course.

† Prerequisite: adequate professional preparation.

‡ This special section of Education 112 is for students in the Special Program in Elementary Teacher Education.

§ Students whose College Board English Composition Achievement Test scores suggest inadequate preparation may be assigned to English 1x or may be tested in vocabulary, spelling, grammar, standard usage, and writing skill, before placement in either English 1x or 1. Students whose scores indicate marked superiority will be allowed to waive the English 1 requirement.

All students enrolled in curricula leading to Bachelor's degrees in Columbian College (who are required to take one year of English composition and one year of literature in English, Classical Languages, French, German, Russian or Slavic, or Spanish) will follow the sequence of English 1 or 1x, both semesters of one of the introductory literature courses, and English 4.

English 1 or 1x is prerequisite to all other courses in English. English 2 is the second half of the 6-hour composition course requirement of students not required to follow the Columbian College sequence.



**1 English Composition (3)**

Analysis and practice of expository techniques with emphasis on unity, development, and organization. **First Session:** MTWThF 11:10 am-12:30 pm.

**1x English Composition (3)**

Intensive course in English grammar and composition for students inadequately prepared for English 1. The course begins with detailed instruction, drill, and exercises in the basic structure of the English language and in the writing of paragraphs; it continues with the content of English 1. English 1x meets ten hours a week and carries 3 semester hours of credit. The total fee is \$196 (the tuition fee of \$171, plus an additional fee of \$25). **First Session:** MTWThF 9:40-11:50 am.

**2 English Composition (3)**

For second-semester freshmen not following the Columbian College sequence. Readings and practice in expository and argumentative techniques and research procedure. Credit is not given to students with credit for English 4. Prerequisite: English 1 or 1x. **Second Session:** MTWThF 9:40-11 am.

**4 English Composition (3)**

Second half of the 6-hour English composition course required of Columbian College students. Critical analysis and practice in expository and argumentative techniques; research procedure. Credit not given to students with credit for English 2. Prerequisite: English 1 or 1x and both halves of one of the introductory literature courses. **Second Session:** MTWThF 11:10 am-12:30 pm.

**ENGLISH LITERATURE****\*51-52 Introduction to English Literature (3-3)**

Historical survey: English 51, from beginnings to 1800; English 52, since 1800. Prerequisite: English 1 or 1x. **First Session:** English 51—MTWThF 7:30-8:50 pm; English 52A—MTWThF 6-7:20 pm. **Second Session:** English 52B—MTWThF 7:30-8:50 pm.

**130 Elizabethan Nondramatic Literature (3)**

The poetry of Edmund Spenser. **First Session:** MTWThF 9:40-11 am.

**136 Shakespeare (3)**

**Second Session:** MTWThF 11:10 am-12:30 pm.

**139 The 17th Century (3)**

Poetry and prose from 1603 to 1660. **First Session:** MTWThF 11:10 am-12:30 pm.

**141 English Literature, 1660-1740 (3)**

Poetry and prose of the Neoclassic period. **Second Session:** MTWThF 6-7:20 pm.

**192 Medieval Legend and Saga (3)**

Celtic and Norse. **First Session:** MTWThF 6-7:20 pm.

\*English 51-52, 71-72, 91-92; Classical Languages 71-72; French 51-52; Russian 91-92 or Slavic 93-94; or Spanish 51-52 is prerequisite to all second-group courses except English 125 and 171-72.



# AMERICAN LITERATURE

## \*71-72 Introduction to American Literature (3-3)

Historical survey: English 71, from the beginnings to the Civil War; English 72, from the Civil War to the present. Prerequisite: English 1 or 1x.  
**First Session:** English 71—MTWThF 9:40-11 am; English 72A—MTWThF 11:10 am-12:30 pm. **Second Session:** English 72B—MTWThF 9:40-11 am.

## 169 Recent English and American Literature (3)

**Second Session:** MTWThF 1:10-2:30 pm. (See American Studies program, page 32.)

## 170 The American Short Story (3)

Historical development of the short story in America. **First Session:** MTWThF 1:10-2:30 pm.

## 173 Major American Poets (3)

Advanced critical study of significant writers and movements, from beginnings through 19th century. **First Session:** MTWThF 6-7:20 pm.

## 175-76 American Drama (3-3)

Historical and critical study of significant plays and forms: English 175, from beginnings to 1930; English 176, since 1930. For undergraduate credit only. **First Session:** English 175; **Second Session:** English 176. MTWThF 9:40-11 am.

## 195 Social Aspects of the New England Renaissance (3)

The major writings of Emerson, Thoreau, Melville, and Hawthorne, as viewed within the New England social milieu of the period 1830-1860. **Second Session:** MTWThF 6-7:20 pm.

For information concerning the American Studies program, see page 32.

# French†

Administered by the Department of Romance Languages and Literatures,  
 J.A. Frey, *Chairman*

## 1-2 First-year French (3-3)

A year course: credit given on completion of French 2. For beginners. Pronunciation, conversation, grammar, composition, reading of modern French prose. Aural training, oral practice in language laboratory. Lab.

\* English 51-52, 71-72, 91-92; Classical Languages 71-72; French 51-52; Russian 91-92 or Slavic 93-94; or Spanish 51-52 is prerequisite to all second-group courses except English 125 and 171-72.  
 † A standardized placement examination given before registration is required of all entering students who wish to continue in college the language begun in high school. Upon completion of the examination assignment is made to the appropriate course, with credit assigned on the usual basis.



oratory fee, \$17.50 a session. **First Session:** French 1; **Second Session:** French 2. Section A—MTWThF 8:10–9:30 am; Section B—MTWThF 7:30–8:50 pm; laboratory\*.

†3–4 **Second-year French (3–3)**

A year course: credit given on completion of French 4. Conversation, grammar, composition, reading of modern French prose, introduction to French civilization. Aural training, oral practice in language laboratory. Laboratory fee, \$17.50 a session. Prerequisite: French 1–2, 2x, or two years of high school French. **First Session:** French 3; **Second Session:** French 4. Section A—MTWThF 9:40–11 am; Section B—MTWThF 6–7:20 pm; laboratory\*.

9–10 **French Conversation and Composition (3–3)**

Prerequisite: French 4 or equivalent and permission of instructor.

**First Session:** French 9; **Second Session:** French 10. MTWThF 9:40–11 am.

11 **Composition (Honors Program) (3)**

(See Language Study in France, page 35.)

49 **French Readings for Nonmajor Students (3)**

For graduate students preparing for reading examinations. Undergraduates admitted only with specific permission of the instructor. No academic credit for graduate students. **First Session:** MTWThF 6–7:20 pm.

†51–52 **Survey of French Literature and Civilization (3–3)**

Social, artistic, and cultural background of French civilization. Lectures, readings, recitations, and informal discussions. **First Session:** French 51; **Second Session:** French 52. MTWThF 1:10–2:30 pm.

53 **Conversation and Civilization (3)**

(See Language Study in France, page 35.)

109 **Advanced French Conversation and Composition (3)**

Prerequisite: French 10 or equivalent and permission of instructor.

**First Session:** MTWThF 1:10–2:30 pm.

129 **Contemporary French Literature (3)**

**First Session:** MTWThF 9:40–11 am.

256 **19th Century French Literature (3)**

**First Session:** MTWThF 4:10–5:30 pm.

\*For laboratory sections, see Hourly Schedule, pages 89–95. All First Session language laboratories begin June 15.  
†French 3–4 is required, and French 51–52 is recommended, as prerequisite to all second-group courses.



## Geography and Regional Science

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P.J. Mika, *Chairman*

### 51 Introduction to Geography (3)

Interrelated processes affecting the character of landforms, hydrography, soils, vegetation, and climate; relevance of their world patterns to man.  
**First Session:** MTWThF 9:40-11 am.

### 52 World Regions (3)

Survey of major countries, synthesis and analysis of major world regions.  
**First Session:** MTWThF 1:10-2:30 pm.

### 127 World Population and Settlement (3)

Patterns of world population and facilities used by man in the occupancy of area for various activities. **Second Session:** MTWThF 9:40-11 am.

## Geology

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Geza Teleki, *Chairman*

### 1-2 Introductory Geology (3-3)

Survey course covering the principles of geology. Laboratory fee, \$10 each session. **First Session:** Geology 1; **Second Session:** Geology 2.  
Lecture MTWThF 9:40-11 am, laboratory MTWThF 11:10 am-1 pm.

### 172 Regional Geology of North America (3)

Lecture, research, and discussion of a major geologic or physiographic region of North America. Admission by permission of instructor. **First Session:** lecture MTWTh 2:10-3:35 pm, laboratory or field TWTh 3:45-6 pm.

### 295 Research (2)

Research on problems approved by the Staff. Permission of instructor leading the field work required. May be repeated for credit. **First Session:** hours to be arranged.

### 299-300 Thesis (3-3)

**First Session:** Geology 299; **Second Session:** 300.



## Germanic Languages and Literatures \*

W.K. Legner, *Chairman*

### 1-2 First-year German (3-3)

A year course: credit given on completion of German 2. Essentials of German grammar; translation of easy prose. Aural-oral practice in language laboratory. Laboratory fee, \$17.50 each session. **First Session:** German 1; **Second Session:** German 2. Lecture: Section A—MTWThF 9:40-11 am, Section B—MTWThF 6-7:20 pm; laboratory†.

### 3-4 Second-year German (3-3)

A year course: credit given on completion of German 4. Selections from modern German prose; continuation and review of grammar. Aural-oral practice in language laboratory. Laboratory fee, \$17.50 each session. Prerequisite: German 1-2 or two years of high school German. **First Session:** German 3; **Second Session:** German 4. Lecture: Section A—MTWThF 11:10 am-12:30 pm, Section B—MTWThF 7:30-8:50 pm; laboratory†.

### 47 Beginning German for Reading Examination Candidates (0)

Specifically for graduate students with little or no German, who are preparing for reading examinations. No academic credit. Tuition fee, \$171. **First Session:** MTWThF 6-7:20 pm.

### 49 German Readings for Nonmajor Students (3)

Primarily for graduate students preparing for reading examinations. Undergraduates admitted with permission of instructor. No academic credit for graduate students. Prerequisite: German 4 or German 47, or equivalent. **Second Session:** Sections A-1 and A-2—MTWThF 6-7:20 pm.

## Health Care Administration

F.H. Gibbs, *Chairman*

### 270 Research in Health Care Administration (3)

Field research. Primarily for doctoral candidates; open to graduate students with consent of instructor. **First Session:** hours to be arranged.

### 286 Readings in Health Care Administration (3)

Supervised readings in some special areas or subdivisions of health care administration. Primarily for doctoral candidates; open to other students by arrangement. **Second Session:** hours to be arranged.

### 293 Hospital Residency I (3)

First third of the twelve-month residency, beginning June 1 or July 1 of each year, has four major objectives: work experience under a qualified

\* A standardized placement examination administered at registration is required of all entering students who wish to continue in college the language begun in high school. Upon completion of the examination assignment is made to the appropriate course, with credit assigned on the usual basis.

† For laboratory sections, see the Hourly Schedule, pages 89-95. All First Session language laboratories begin June 15.



preceptor; periodic seminars with University staff; periodic written progress reports of work accomplished; and a final written report of a major investigation. Sections A, B, C, and D.

### 296 Hospital Residency II (3)

First third of a twelve-month residency, beginning June 1 or July 1 of each year. For selected students who take a second year of residency.

## History \*

R.B. Thompson, *Chairman*

### 39-40 European Civilization in Its World Context (3-3)

Primarily for freshmen. History 39: political, social, economic, and cultural history from ancient times to 1715. History 40: 1715 to the present. **First Session:** History 39A—MTWThF 9:40-11 am; History 40A—MTWThF 6-7:20 pm. **Second Session:** History 39B—MTWThF 6-7:20 pm; History 40B—MTWThF 9:40-11 am.

### 71-72 Civilization of the United States (3-3)

Primarily for sophomores. History 71: political, social, economic, and cultural forces of the United States in their world setting from 1492 to 1865. History 72: 1865 to the present. **First Session:** History 71A—MTWThF 11:10 am-12:30 pm; History 72A—MTWThF 6-7:20 pm. **Second Session:** History 71B—MTWThF 6-7:20 pm; History 72B—MTWThF 8:10-9:30 am.

### 109 Ancient History (3)

Political, social, and intellectual aspects of the ancient Near East and Greece. **First Session:** MTWThF 1:10-2:30 pm.

### 112 Medieval History (3)

Political, social, and intellectual aspects from the 11th through the 14th centuries. **First Session:** MTWThF 11:10 am-12:30 pm.

### 137 History of Soviet Foreign Policy (3)

Russian foreign policy since 1917. Continuity between Tsarist and Soviet foreign policy, relation between state diplomacy and communist ideologies, disarmament, international organizations, etc. **Second Session:** MTWThF 7:30-8:50 pm. (See Communist Affairs program, pages 33-34.)

### 164 History of Latin America (3)

Political, social, and cultural development. The national period. **Second Session:** MTWThF 9:40-11 am.

### 173 Representative Americans (3)

Significant and pivotal personalities in government, business, science, re-

\* History 39-40 is prerequisite to courses 109 through 152 and 187 through 196; History 71-72, to courses 170 through 184; either History 39-40 or 71-72, to courses 161 through 166. Prerequisite to History 105-6 is either History 39-40 or a background in a science.

Prerequisite: to all third- and fourth-group courses: the appropriate second-group preparation and the consent of the instructor.



ligion, journalism, the arts, and social reform. **Second Session:** MTWThF 8:10-9:30 am.

**175 U. S. Political History (3)**

To the Civil War. **First Session:** MTWThF 9:40-11 am.

**182 U. S. Diplomatic History (3)**

Tendencies toward isolation, expansion, and collectivism; disputes with foreign countries and their settlement; activities of American secretaries of state and diplomatic agents since 1898. **First Session:** MTWThF 1:10-2:30 pm.

**203-4 Research Seminar (3-3)**

Prerequisite: approval of the Department. **First Session:** History 203; **Second Session:** History 204. Hours to be arranged.

**245 Research Seminar: Russian History (3)**

Prerequisite: History 145-46 or equivalent. **Second Session:** MWF 2-4 pm.

**262 Research Seminar: Latin American History (3)**

Prerequisite: 6 semester hours selected from History 161, 162, 163, 164, 165, 166. **Second Session:** MWF 11:10 am-1 pm.

**275 Research Seminar: U. S. Political History (3)**

Prerequisite: History 175-76 or equivalent. **First Session:** MWF 11:10 am-1 pm.

**299-300 Thesis (3-3)**

Required of all candidates for the Master's degree specializing in history. **Both Sessions:** hours to be arranged.

**\*372 Readings in American Social History (3)**

**Second Session:** TTh 1:10-4 pm.

## Institute for Sino-Soviet Studies

For information concerning the Communist Affairs program, see pages 33-34.

## Italian

Administered by the Department of Romance Languages and Literatures,  
J.A. Frey, *Chairman*

**1-2 First-year Italian (3-3)**

A year course: credit given on completion of Italian 2. For beginners. Pronunciation, conversation, grammar, composition, reading of modern Italian prose. Aural training, oral practice in language laboratory. Lab-

\* Limited to graduate students; but primarily for doctoral candidates.



oratory fee, \$17.50 a session. **First Session:** Italian 1; **Second Session:** Italian 2. MTWThF 8:10–9:30 am; laboratory\*.

### 3–4 Second-year Italian (3–3)

A year course: credit given on completion of Italian 4. Conversation, grammar, composition, reading in modern Italian prose, introduction to Italian civilization. Aural training, oral practice in language laboratory. Laboratory fee, \$17.50 a session. Prerequisite: Italian 1–2 or two years of high school Italian. **First Session:** Italian 3; **Second Session:** Italian 4. MTWThF 9:40–11 am; laboratory\*.

## Latin

See "Classical Languages and Literatures."

## Law

### FIRST SESSION—JUNE 5 TO JULY 19

#### 150B Real Property (4)

Historical background of the law of estates and conveyancing; types of estates; dower and curtesy; landlord and tenant relationship; concurrent estates; future interests at common law and after the Statute of Uses; Rule Against Perpetuities; incidents of divided ownership, as waste; natural rights. MTWThF 5:50–7:40 pm.

#### 202A Administrative Law (3)

Position of administrative process in separation of powers, including status of administrative personnel, administrative hearings, judicial scrutiny of administrative action, discretion, rule-making—particularly as relating to federal administrative agencies. MTWTh 10:10–12 am.

#### 209A Business Associations I (2)

Legal principles concerning association in business by agency, partnership, other unincorporated forms, and corporations; creation, form and nature of agency, partnership and corporation; basic principles of agency and partnership and introductory related principles of corporation law. MTWThF 12:10–1 pm.

#### 210A Business Associations II (4)

Corporate law, with emphasis on operations and financing of corporations. Control of corporations, action by corporate directors, officers, shareholders. Control devices. Directors' and shareholders' duties of care and loyalty, insiders' transactions in shares of the corporation. Derivative suits, kinds of shares, dividends, corporate distributions. MTWThF 11:10 am–1 pm.

#### 215A Civil Procedure (4)

Mechanics of litigation—rules which govern process by which rights and duties studied in substantive law courses are enforced; pleadings, discovery.

\* For laboratory sections, see the Hourly Schedule, pages 89–95. All First Session language laboratories begin June 15.



ery, pre- and post-trial motions, jurisdiction and venue, equity jurisdiction and trial by jury, former adjudication. Emphasis on Federal Rules of Civil Procedure but principles and main problems indigenous to all procedural systems are developed. MTWThF 11:10 am-1 pm.

**219A Commercial and Investment Paper (3)**

Bills of exchange, promissory notes, checks, bonds, certificates of stock, other forms of commercial and investment paper in the context of their business function and legal setting under common law and uniform laws, including the proposed Uniform Commercial Code. MTWTh 11:10 am-1 pm.

**224A Sales and Sales Financing (3)**

Law relating to the sale and distribution of goods and to the security financing devices utilized in this connection, with particular attention to the effect of existing and proposed uniform laws. MTWTh 9:10-11 am.

**235A Domestic Relations (2)**

Marriage, annulment, and divorce; adoption and custody of children; economic relations. MTWThF 12:10-1 pm.

**238A Equity (2)**

Nature of equity jurisprudence through analysis of selected problems in equity; historical development of equity, including problems of merger of law and equity; use of equity jurisdiction offensively and defensively, including multi-party actions, injunction of executive and legal actions, equitable abstention; emphasis on fashioning of equitable remedies. MTWThF 10:10-11 am.

**251B Insurance (2)**

A primary risk distributing medium and the rules by which legislative, administrative, judicial bodies seek to promote its benefits and avert its dangers. Includes insurance marketing, insurable interest, subrogation, transfer of insurance benefits to nonpolicyholders, coverage and other insurance policy provisions, disposition of claims. TTh 5:50-8:05 pm.

**254B International Law and World Order (3)**

Traditional content of introductory course in international law presented in context of values and institutions of world community; emphasis upon national states as participants in decision-making processes with consideration also of individuals, international public organizations, political parties, pressure groups, private associations; analysis of range of available sanctions; roles and effects of international agreements under United States Constitution. Complements but does not repeat material in Law 391. MTThF 5:50-7:40 pm.

**259A Labor Law (3)**

Law governing labor-management relations, organization and representation of employees, regulation of economic weapons, enforcement of collective bargaining agreements, interunion and intraunion relations. MTWTh 9:10-11 am.

**270A Legislation (2)**

Legislative process and roles of participants in the process; operation of the United States Congress and state legislatures, including fact finding, organization, procedure. Statutory interpretation emphasized to provide foundation for more advanced courses. MTWThF 9:10-10 am.



**285B Trusts and Estates I (3)**

Noncommercial transfers of wealth at death or during life. Essential elements and formalities for creation of trusts and execution of wills, revocation and alteration, grounds for contest, limits on property owner's power to control, intestate succession. MTThF 5:50-7:40 pm.

**307B Comparative Law (3)**

Civil Law System, general introduction to foreign law as exemplified by Roman Law and French and German Civil Codes, comparative study of administration of justice and legal institutions. Delictual and contractual obligations. MTThF 5:50-7:40 pm.

**309A Conflict of Laws (3)**

Legal problems arising from occurrences transcending state or national boundaries; jurisdiction; foreign judgments; constitutional influences; theoretical bases of choice of law principles and their application to specific fields, including torts, contracts, property, family law, administration of estates, business associations. MTWTh 10:10-12 am.

**318A Creditors' Rights (3)**

Creditors' remedies outside bankruptcy—compositions, agreements, general assignments; bankruptcy proceedings under the federal statute, administration, discharge, the position and powers of the trustee, preferences; corporate reorganization under Chapter X of the Bankruptcy Act. MTWTh 11:10 am-1 pm.

**330B Federal Antitrust Laws (3)**

Sherman and Clayton Acts, related statutes. Price fixing agreements and other types of trade restraints considered under Section 1; monopolizing considered under Section 2 of the Sherman Act. Mergers and tie-in sales; other activities under the Clayton Act. All types of business conduct raising questions under the antitrust laws, including trade association activities, exclusive-dealing arrangements, boycotts, patents and copyrights. MTThF 5:50-7:40 pm.

**349B Local Government Law (2)**

Decision-making processes in metropolitan and local communities; types and objectives of city, county, special function local government units; intergovernmental relations; original organization and changes; personnel; local lawmaking; responsibility in tort; introduction to community planning. MT 5:50-8:05 pm.

**378A Secured Transactions (3)**

Suretyship and mortgages: security interests in real and personal property, their creation, transfer, enforcement, extinguishment; law of suretyship, especially in context of accommodation credit and commercial and financial practices. MTWTh 10:10-12 am.

**SECOND SESSION—JULY 20 TO SEPTEMBER 2**

**202B Administrative Law (3)**

Position of administrative process in separation of powers, including status of administrative personnel, administrative hearings, judicial scrutiny of administrative action, discretion, rule-making—particularly as relating to federal administrative agencies. MTThF 5:50-7:40 pm.



**209B Business Associations I (2)**

Legal principles concerning association in business by agency, partnership, other unincorporated forms, and corporations; creation, form and nature of agency, partnership and corporation; basic principles of agency and partnership and introductory related principles of corporation law. MT 5:50-8:05 pm.

**210B Business Associations II (4)**

Corporate law, with emphasis on operations and financing of the corporation. Control of the corporation, action by corporate directors, officers, and shareholders. Control devices. Directors' and shareholders' duties of care and loyalty, and insiders' transactions in shares of the corporation. Derivative suits, kinds of shares, dividends, and corporate distributions. MTWThF 5:50-7:40 pm.

**215B Civil Procedure (4)**

Mechanics of litigation—rules which govern process by which rights and duties studied in substantive law courses are enforced; pleadings, discovery, pre- and post-trial motions, jurisdiction and venue, equity jurisdiction and trial by jury, former adjudication. Emphasis on Federal Rules of Civil Procedure but principles and main problems indigenous to all procedural systems are developed. MTWThF 5:50-7:40 pm.

**219B Commercial and Investment Paper (3)**

Bills of exchange, promissory notes, checks, bonds, certificates of stock, other forms of commercial and investment paper in the context of their business function and legal setting under common law and uniform laws, including the proposed Uniform Commercial Code. MTWTh 5:50-7:40 pm.

**224B Sales and Sales Financing (3)**

Law relating to the sale and distribution of goods and to the security financing devices utilized in this connection, with particular attention to the effect of existing and proposed uniform laws. MTWTh 5:50-7:40 pm.

**240 Evidence (4)**

Preparation and presentation of evidence, including proof of writings; qualification and examination of witnesses with emphasis on impeachment; privilege; opinion testimony; determination of relevancy; demonstrative, experimental, and scientific evidence; application of the hearsay rule. Section A—MTWThF 10:10-12 am, Section B—MTWThF 5:50-7:40 pm.

**251A Insurance (2)**

A primary risk distributing medium and the rules by which legislative, administrative, judicial bodies seek to promote its benefits and avert its dangers. Includes insurance marketing, insurable interest, subrogation, transfer of insurance benefits to nonpolicyholders, coverage and other insurance policy provisions, disposition of claims. MTWThF 9:10-10 am.

**279A Taxation—Federal Income (3)**

Survey of substantive provisions of federal income tax, including concept of gross income, provisions affecting taxation of family and individual transactions, limitations on allowable deductions, sales and dispositions of property, problems of capital gains taxation, nontaxable exchanges. MTWTh 11 am-1 pm.



**285-86 Trusts and Estates I-II (3-3)**

Noncommercial transfers of wealth at death or during life. Law 285: essential elements and formalities for creation of trusts and execution of wills, revocation and alteration, grounds for contest, limits on property owner's power to control, intestate succession. Law 286: dispositive provisions, common questions of construction, future interests problems, administration of estates and trusts, charitable trusts. Prerequisite to Law 285: Law 150; to Law 286: Law 285. Law 285A—MTWTh 10:10-12 am; Law 286B—MTThF 5:50-7:40 pm.

**295B Unfair Trade Practices (3)**

Unfair trade practices at common law and under statutes; trademarks, trade names; copyright law; misappropriation of ideas; protection of competitors and consumers against false advertising under Federal Trade Commission Act; resale price maintenance under state Fair Trade Acts; state sales-below-cost statutes; Robinson-Patman Price Discrimination Act; miscellaneous business practices. MTThF 5:50-7:40 pm.

**309B Conflict of Laws (3)**

Legal problems arising from occurrences transcending state or national boundaries; jurisdiction; foreign judgments; constitutional influences; theoretical bases of choice of law principles and their application to specific fields, including torts, contracts, property, family law, administration of estates, business associations. MTThF 5:50-7:40 pm.

**376A Restitution (2)**

Quasi-contracts, constructive trusts, rescission, and other legal and equitable remedies for restoring property and money which unjustly enrich others at the expense of volunteers, victims of misappropriation, and parties to mistaken contracts. MTWThF 11:10-12 am.

**378B Secured Transactions (3)**

Suretyship and mortgages: security interests in real and personal property, their creation, transfer, enforcement, extinguishment; law of suretyship, especially in context of accommodation credit and commercial and financial practices. MTThF 5:50-7:40 pm.

**442B Seminar: Labor Law (2)**

Group study of contemporary problems in labor law. (RP\*) MT 5:50-8:05 pm.

**THIRTEEN-WEEK SESSION—JUNE 5 TO SEPTEMBER 2****235B Domestic Relations (2)**

Marriage, annulment, and divorce; adoption and custody of children; economic relations. W 5:50-8:05 pm.

**238B Equity (2)**

Nature of equity jurisprudence through analysis of selected problems in equity; historical development of equity, including problems of merger of law and equity; use of equity jurisdiction offensively and defensively, including multi-party actions, injunction of executive and legal actions, equitable abstention; emphasis on fashioning of equitable remedies. W 5:50-8:05 pm.

\* Seminars marked (RP) require the preparation of a research paper in lieu of an examination.



**243B Federal Jurisdiction (2)**

Relationship of federal courts to Congress and to the states, through analysis of cases dealing with federal judicial function (including problems of advisory opinions, standing to litigate, and justiciability), federal questions in federal courts, federal review of state court decisions (including relation between state and federal substantive law, procedural problems in exercising review, application of law to fact). W 5:50-8:05 pm.

**427B Economic Planning and the Law (2)**

Interrelation of law and economics in such subject matter categories and decisional contexts as antitrust laws, economic regulation of industry, fiscal policy planning, government research and development practices, land use planning, and foreign trade and investment. (RP\*) W 5:50-8:05 pm.

**435B Seminar: Government Contracts (2)**

Research and discussion of selected problem areas. (RP\*) W 5:50-8:05 pm.

## Mathematics†

N.D. Nelson, *Chairman*; Dagmar Henney, *Acting Chairman*, Second Session

**3 College Algebra (3)**

Equivalent to second-year high school algebra. Prerequisite: one year each of high school algebra and high school geometry. **First Session:** Section A—MTWThF 6-7:20 pm. **Second Session:** Section B—MTWThF 7:30-8:50 pm.

**6 Plane Trigonometry (3)**

Prerequisite: two years of high school algebra and one year of high school geometry, or Mathematics 3 (or concurrent registration therefor). **First Session:** Section A—MTWThF 7:30-8:50 pm. **Second Session:** Section B—MTWThF 6-7:20 pm.

**9 General Mathematics I (3)**

For students electing Mathematics 9 and 10 as a terminal sequence. Numerals and numbers, number bases, mathematical systems, sets, propositional logic and truth values. Prerequisite: two years of high school mathematics. **First Session:** Section A—MTWThF 8:10-9:30 am. **Second Session:** Section B—MTWThF 4:10-5:30 pm.

**10 General Mathematics II (3)**

Number systems, Euclidean and non-Euclidean geometry, graphs, functions, introduction to analytic geometry. Prerequisite: Mathematics 9. **First Session:** Section A—MTWThF 4:10-5:30 pm. **Second Session:** Section B—MTWThF 9:40-11 am.

\* Seminars marked (RP) require the preparation of a research paper in lieu of an examination.  
† No first-group course in mathematics is available for college credit if the student's previous training in mathematics meets the prerequisite for a higher numbered course. Mathematics 24 is prerequisite to all second-group courses.



**15 Finite Mathematics I (3)**

Introduction to logic, sets, and probability. Prerequisite: two years of high school mathematics. **First Session:** MTWThF 9:40–11 am.

**16 Finite Mathematics II (3)**

Vectors and matrices, mathematics of finance and accounting, linear programming, introduction to game theory. Prerequisite: Mathematics 15. **Second Session:** MTWThF 9:40–11 am.

**21 Calculus I (3)**

Elementary concepts of analytic geometry. Differentiation of algebraic functions with applications. Prerequisite: Mathematics 3 and 6; or two years of high school algebra, one year of high school geometry, and one-half year of high school trigonometry; or equivalent. **First Session:** Sections A-1 and A-2—MTWThF 11:10 am–12:30 pm. **Second Session:** Section B—MTWThF 6–7:20 pm.

**22 Calculus II (3)**

Differentiation and integration of transcendental functions and applications, topics in analytic geometry, techniques of integration. Prerequisite: Mathematics 21. **First Session:** Section A—MTWThF 6–7:20 pm. **Second Session:** Sections B-1 and B-2—MTWThF 11:10 am–12:30 pm.

**23 Calculus III (3)**

Vector concepts, improper integrals, polar coordinates, infinite series, and solid geometry. Prerequisite: Mathematics 22. **First Session:** MTWThF 1:10–2:30 pm.

**24 Calculus IV (3)**

Multiple integration and partial differentiation with applications, line and surface integrals, differential equations. Prerequisite: Mathematics 23. **Second Session:** MTWThF 1:10–2:30 pm.

**111 Mathematics for Engineers and Physicists I (3)**

Differential equations, linear algebra. **First Session:** MTWThF 7:30–8:50 pm.

**112 Mathematics for Engineers and Physicists II (3)**

Fourier series, Laplace transformation, partial differential equations. Prerequisite: Mathematics 111. **Second Session:** MTWThF 7:30–8:50 pm.

**113 Graph Theory (3)**

Directed and undirected graphs; unicursal graphs; shortest paths; Hamilton circuits; incidence, circuit and cut-set matrix relations; coloring problems; network flow. **First Session:** MTWTh 6–7:40 pm.

**122 Introduction to Abstract Algebra (3)**

**First Session:** MTWThF 9:40–11 am.

**124 Introduction to Matrix Theory (3)**

Elementary theory of finite vector spaces, determinants, equivalence, matrices with polynomial elements, similarity of matrices. **Second Session:** MTWThF 11:10 am–12:30 pm.



**139 Advanced Calculus I (3)**

Review and extension of elementary one-variable calculus, emphasis on the theoretical foundations. Prerequisite: Mathematics 24 or 28, or equivalent. **First Session:** MTWThF 7:30–8:50 pm.

**140 Advanced Calculus II (3)**

Calculus of several variables. Prerequisite: Mathematics 139 or equivalent. **Second Session:** MTWThF 7:30–8:50 pm.

**157 Introduction to Complex Variable Theory (3)**

**Second Session:** MTWThF 6–7:20 pm.

**250 Measure and Integration (3)**

Lebesgue measure and integration, measure and integration in abstract spaces, the Daniell integral. **First Session:** MTWThF 6–7:20 pm.

**299–300 Thesis (3–3)**

Both Sessions.

**Music**

George Steiner, *Chairman*

**MUSIC HISTORY AND LITERATURE****3 Music Appreciation I (3)**

Introductory history of musical styles, related to listening; elements and materials of music. **First Session:** Section A—MTWThF 11:10 am–12:30 pm. **Second Session:** Section B—MTWThF 6–7:20 pm.

**4 Music Appreciation II (3)**

Survey of musical forms, structures and textures; aural analysis of selected literature. **First Session:** Section A—MTWThF 6–7:20 pm. **Second Session:** Section B—MTWThF 11:10 am–12:30 pm.

**103–4 History of Music (3–3)**

Development of music in the Western World from the early Christian Era to the present. **First Session:** Music 103; **Second Session:** Music 104. MTWThF 9:40–11 am.

**121 The Opera (3)**

Survey of the history and styles of opera; analysis of representative works. **First Session:** MTWThF 1:10–2:30 pm.

**MUSIC THEORY****5–6 Elementary Harmony (3–3)**

Triads, inversions; chord analysis, construction and progression; part-writing, modulations, figured bass. **First Session:** Music 5; **Second Session:** Music 6. MTWThF 4:10–5:30 pm.



**APPLIED MUSIC****EIGHT-WEEK COURSES—JUNE 13 TO AUGUST 4**

- \*11 Piano (1)
- \*13 Voice (1)
- \*15 Organ (1)
- \*17 Orchestral Instrument (1)
- \*111 Piano (1)
- \*113 Voice (1)
- \*115 Organ (1)
- \*117 Orchestral Instrument (1)

**Philosophy**

R.H. Schlagel, *Chairman*

**51-52 Introduction to Philosophy (3-3)**

Problems of modern philosophy in relation to scientific and social developments since the Renaissance. Philosophy 51: theories of knowledge. Philosophy 52: theories of reality. **First Session:** Philosophy 51; **Second Session:** Philosophy 52. MTWThF 9:40-11 am.

**152 Epistemology (3)**

Inquiry into the basis and structure of knowledge, the problem of perception, and the meaning and criteria of truth. **First Session:** MTWThF 6-7:20 pm.

**172 American Philosophy (3)**

Philosophies of Peirce, Royce, James, Dewey, Santayana, and Whitehead, as representatives of American thought. **First Session:** MTWThF 8:10-9:30 am.

**193 Contemporary European Philosophy (3)**

Main currents of 20th century European philosophy: the British analytic movement, positivism, phenomenology, existentialism. **Second Session:** MTWThF 1:10-2:30 pm.

\* Individual lessons. Studio fee, \$40; hours to be arranged.



## Physical Education, Health, and Recreation for Men

V.J. DeAngelis, *Chairman*

### PHYSICAL EDUCATION

#### \*1-2 Freshman Physical Education (1-1)

Five periods of supervised activity a week. Physical Education 1: basketball, golf, and tennis. Physical Education 2: volleyball, golf, and tennis. Physical Education fee, \$4.50 a session. **First Session:** Physical Education 1; **Second Session:** Physical Education 2. MTWThF 11:10 am-12:30 pm.

#### \*11-12 Sophomore Physical Education (1-1)

Five periods of supervised activity a week. Physical Education 11: basketball, golf, and tennis. Physical Education 12: volleyball, golf, and tennis. Physical Education fee, \$4.50 a session. **First Session:** Physical Education 11; **Second Session:** Physical Education 12. MTWThF 11:10 am-12:30 pm.

#### 56 Dance Technique and Theory (1)

A 3-week course: **June 12 to 30**—MTWThF 9:40-11 am. (This course is a part of the Dance Workshop. For details, see pages 34-35.)

#### †101 Elementary School Physical Education (3)

Current trends; age characteristics and their implications for the organization of school and playground programs. Curriculum, techniques of teaching, evaluation, integration of subject-matter areas. A 3-week course: **June 12 to 16**—lecture MTWThF 4:10-6 pm, conference to be arranged; **June 19 to 30**—lecture MTWThF 10:10-12 am, conference to be arranged, small group discussions and field work—afternoon.

#### 110 Dance Composition II (1 to 2)

A 3-week course: **June 12 to 30**—MTWThF 1:10-2:30 pm. (This course is a part of the Dance Workshop. For details, see pages 34-35.)

#### 120 Repertory (1)

A 3-week course: **June 12 to 30**—MTWThF 3-4 pm. (This course is a part of the Dance Workshop. For details, see pages 34-35.)

#### 215 Administration of High School Physical Education and Athletics (3)

Administrative issues and problems; best means of solving these problems. A 6-week course: **June 12 to July 21**. Lecture MW 6:40-9 pm; conference MW 9-9:40 pm.

#### 280 Supervision of Physical Education, Health, and Recreation (3)

Purpose and values, principles, prevalent concepts, best accepted techniques. A 6-week course: **July 3 to August 11**—TTh 6:40-9 pm; conference—TTh 9-9:40 pm.

\* Equipment will be provided.

† A course requiring the full daytime attention of enrollees. Concurrent registration for another course scheduled in morning or afternoon not permitted.



**297 Advanced Topical Studies (3)**

Individual studies, critique and synthesis of research findings and of literature. Prerequisite: Education 295. May be repeated for credit.  
A 3-week course: June 12 to 30. Hours to be arranged.

**RECREATION**

**250 Recreation and Outdoor Education (3)**

Current trends in philosophy, principles, practices, and programs for outdoor education, camping, and community-school relationships. A 6-week course: July 3 to August 11—MW 6:40–9 pm; conference—MW 9–9:40 pm.

**Physical Education, Health, and Recreation for Women**

Loretta Stallings, *Chairman*

**PHYSICAL EDUCATION**

**1–2 Freshman Physical Education (1–1)**

Five periods a week chosen from the activities offered each session. Medical A classification only. Physical Education fee, \$4.50 a session.

**First Session:** Physical Education 1 Section A (badminton)—MTWThF 11:15 am–12:15 pm, Section B (swimming) MTWThF 1:30–2:30 pm.

**Second Session:** Physical Education 2 Section A (fencing)—MTWThF 11:15 am–12:15 pm, Section B (tennis)—MTWThF 1:30–2:30 pm.

**11–12 Sophomore Physical Education (1–1)**

Five periods a week chosen from the activities offered each session. Medical A classification only. Physical Education fee, \$4.50 a session.

**First Session:** Physical Education 11 Section A (badminton)—MTWThF 11:15 am–12:15 pm, Section B (swimming)—MTWThF 1:30–2:30 pm.

**Second Session:** Physical Education 12 Section A (fencing)—MTWThF 11:15 am–12:15 pm, Section B (tennis)—MTWThF 1:30–2:30 pm.

**56 Dance Technique and Theory (1)**

A 3-week course: June 12 to 30—MTWThF 9:40–11 am. (This course is a part of the Dance Workshop. For details, see pages 34–35.)

**\*101 Elementary School Physical Education (3)**

Current trends: age characteristics and their implications for the organization of school and playground programs. Curriculum techniques of teaching, evaluation, integration of subject-matter areas. A 3-week course:

June 12 to 16—lecture MTWThF 4:10–6 pm, conference to be arranged;  
June 19 to 30—lecture MTWThF 10:10–12 am, conference to be arranged, small group discussions and field work—afternoon.

\* A course requiring the full daytime attention of enrollees. Concurrent registration for another course scheduled in morning or afternoon not permitted.



**110 Dance Composition II (1 to 2)**

A 3-week course: June 12 to 30—MTWThF 1:10–2:30 pm. (This course is a part of the Dance Workshop. For details, see pages 34–35.)

**120 Repertory (1)**

A 3-week course: June 12 to 30—MTWThF 3–4 pm. (This course is a part of the Dance Workshop. For details, see pages 34–35.)

**215 Administration of High School Physical Education and Athletics (3)**

Administrative issues and problems; best means of solving these problems.

A 6-week course: June 12 to July 21. Lecture MW 6:40–9 pm; conference MW 9–9:40 pm.

**\*273 Advanced Choreography (3)**

Advanced problems in creative movement and composition. Choreographing of group and solo works in dance. A 3-week course: June 12 to 30. Hours to be arranged.

**280 Supervision of Physical Education, Health, and Recreation (3)**

Purpose and values, principles, prevalent concepts, best accepted techniques. A 6-week course: July 3 to August 11—TTh 6:40–9 pm; conference—TTh 9–9:40 pm.

**\*297 Advanced Topical Studies (3)**

Individual studies, critique and synthesis of research findings and of literature. Prerequisite: Education 295. A 3-week course: June 12 to 30. Hours to be arranged.

**RECREATION****250 Recreation and Outdoor Education (3)**

Current trends in philosophy, principles, practices, and programs for outdoor education, camping, and community-school relationships. A 6-week course: July 3 to August 11—MW 6:40–9 pm; conference—MW 9–9:40 pm.

**Physics**

H.H. Hobbs, *Chairman*

**1 General Physics (4)**

Topics in classical physics which form a foundation for modern physics.

Prerequisite: two years of college preparatory mathematics or concurrent registration for Mathematics 6. Laboratory fee, \$11. **First Session:**

Section A—lecture MTTh 1:10–3 pm, recitation WF 8:30–10 am, laboratory MWF 10:10 am–12:30 pm; Section B—lecture MTTh 1:10–3 pm, recitation WF 1:30–3 pm, laboratory MWF 3:10–5:30 pm.

\* May be repeated once for credit.



**2 General Physics (4)**

Electricity, magnetism, and selected topics from modern physics. Prerequisite: Physics 1 or equivalent. Laboratory fee, \$11. **Second Session:** Section A—lecture MTTh 1:10–3 pm, recitation WF 8:30–10 am, laboratory MWF 10:10 am–12:30 pm; Section B—lecture MTTh 1:10–3 pm, recitation WF 1:30–3 pm, laboratory MWF 3:10–5:30 pm.

**116 Quantum and Solid State Physics (3)**

Primarily for engineers. Prerequisite: Physics 32, 52; Mathematics 111. **Second Session:** MTWThF 6–7:20 pm.

**167 Modern Physics (3)**

Experimental basis of modern physics; introduction to quantum mechanics and statistical mechanics with applications to atomic and nuclear physics. **First Session:** MTWThF 6–7:20 pm.

**170 Elementary Solid State Physics (3)**

Dielectric and magnetic properties of solids, behavior of electrons in metals and semi-conductors, lattice defects. **Second Session:** MTWThF 6–7:20 pm.

**299–300 Thesis (3–3)**

Both Sessions: hours to be arranged.

**Political Science \***

W.H. Kraus, *Chairman*

**\*9–10 Government of the United States (3–3)**

Political Science 9: structure, powers, and operation of Federal Government: Congress, President, and Supreme Court; elections, political parties, and pressure groups. Political Science 10: state and local governments; civil rights; major functions of government at federal, state, and local levels. **First Session:** Political Science 9A—MTWThF 11:10 am–12:30 pm; Political Science 10—MTWThF 9:40–11 am. **Second Session:** Political Science 9B—MTWThF 9:40–11 am.

**107 Problems in Modern Political Thought (3)**

Development of democratic political institutions and analysis of main ideological changes during the 19th and 20th centuries. Emphasis on the rise of Socialism and Communism. **Second Session:** MTWThF 9:40–11 am.

**111 Comparative Government and Politics (3)**

Introduction to government and politics of the principal constitutional democracies of Western Europe: Great Britain and France. **Second Session:** MTWThF 4:10–5:30 pm.

**112 Comparative Government and Politics (3)**

Introduction to government and politics of the principal political systems of Central and Eastern Europe: Germany and the Soviet Union. **Second Session:** MTWThF 6–7:20 pm.

\* Political Science 9–10 is prerequisite to all second-group courses.



- \*115 **Government and Politics in Eastern Europe (3)**  
Second Session: MTWThF 11:10 am-12:30 pm.
- 119-20 **Foundations of American Democracy (3-3)**  
Introduction to political thought in the United States from colonial times to the present. First Session: Political Science 119—MTWThF 8:10-9:30 am. Second Session: Political Science 120—MTWThF 11:10 am-12:30 pm.
- 145 **Political Parties and Politics (3)**  
Organization and operation of political parties in the United States: party system and structure, role of ideology, voting behavior, campaigns and elections, devices for organizing the government. First Session: MTWThF 11:10 am-12:30 pm.
- 151 **Public Administration (3)**  
Theory and practice of governmental administration and its relation to other public and private organizations and interests; introduction to organization theory and behavior. Second Session: MTWThF 8:10-9:30 am.
- \*160 **Modern Communist Ideologies (3)**  
First Session: MTWThF 11:10 am-12:30 pm.
- \*161 **Soviet Government and Politics (3)**  
First Session: MTWThF 7:30-8:50 pm.
- \*162 **Government and Politics of China (3)**  
First Session: MTWThF 8:10-9:30 am.
- 167 **U. S. Foreign Policy (3)**  
Constitutional and political factors that determine the formulation, execution, and substance of U. S. foreign policy. First Session: MTWThF 9:40-11 am.
- 171 **International Politics (3)**  
International factors, international and domestic environments of foreign policy, global and regional patterns, general characteristics of foreign policy. First Session: MTWThF 9:40-11 am.
- 172 **International Organization (3)**  
Development and operation of general and regional international organizations, with emphasis on the United Nations. First Session: MTWThF 11:10 am-12:30 pm.
- 177 **Latin American Politics and Government (3)**  
Types of government, recent developments, current political conditions in each of the Latin American republics. Second Session: MTWThF 6-7:20 pm.
- 181 **Public International Law and Organization (3)**  
Survey of the public law of nations with emphasis on law of peace. First Session: MTWThF 1:10-2:30 pm.

\*Offered in the Institute for Sino-Soviet Studies; see Communist Affairs program, pages 33-34.



**190 Politics of Middle and Southern Africa (3)**

Political life of states and dependent territories of non-Mediterranean Africa, including upper Nile valley and Horn of Africa. Attention to the specifically regional aspect of the foreign policies of these countries.

**First Session:** MTWThF 11:10 am–12:30 pm.

**299–300 Thesis (3–3)**

**Both Sessions:** hours to be arranged.

**Psychology**

*Acting Chairmen:* First Session, R.D. Walk; Second Session, B.I. Levy

**\*1 General Psychology (3)**

Fundamental principles underlying human behavior.

**First Session:**

Section A—MTWThF 9:40–11 am, Section B—MTWThF 7:30–8:50 pm.

**Second Session:** Section C—MTWThF 8:10–9:30 am, Section D—MTWThF 6–7:20 pm.

**8 Psychology of Motivation and Personality (3)**

Introduction to psychology of personality. Principles of motivation, personality development, social and cultural factors, and assessment and description of personality emphasized. **First Session:** Section A—MTWThF 9:40–11 am. **Second Session:** Section B—MTWThF 11:10 am–12:30 pm.

**22 Introduction to Educational Psychology (3)**

Consideration of individual and group differences, adjustments, and the psychology of learning in relation to education and training. **First 3-Week Education Workshop Session, June 12 to June 30:** Section A

—June 12 to 16 lecture 3:45–5:45 pm, small group discussions—evening; June 19 to June 30 lecture 10:10–12 am, conference 9:10–10 am. **Second Session:** Section B—MTWThF 9:40–11 am.

**29 Psychology of Childhood (3)**

Genetic approach to study of the child. Emphasis on the socialization process, learning, and the child's view of the world. **Second Session:** MTWThF 1:10–2:30 pm.

**101 Abnormal Psychology (3)**

Causes, diagnosis, treatment, and prevention of various types of maladjustments and mental disorders. Prerequisite: 6 semester hours in psychology, or 3 in psychology and 6 in a biological science. **First Session:** Section A—MTWThF 1:10–2:30 pm. **Second Session:** Section B—MTWThF 8:10–9:30 am.

**118 Physiological Psychology (3)**

Basic structure and functions of sensory systems, motor systems, central nervous system, autonomic nervous system, and endocrine system, with emphasis on the relations between physiological functioning and behavior. **First Session:** MTWThF 6–7:20 pm.

\* Psychology 1 or 5–6 is prerequisite to all other courses in Psychology. Six credits in first-group courses are prerequisite to all second-group courses.



- 131 Psychological Tests (3)**  
Survey of psychological tests and their more common uses in business, industry, government, law, medicine, and education. Material fee, \$7.  
**First Session:** MTWThF 4:10–5:30 pm.
- 144 Personnel and Industrial Psychology (3)**  
Psychological concepts and methods applied to problems of personnel management, human engineering, employee motivation, and productivity.  
**First Session:** MTWThF 6–7:20 pm.
- \*145 Psychology of Management (3)**  
Introduction to principles of industrial organizations and personnel selection. **Second Session:** MTWThF 6–7:20 pm.
- 151 Social Psychology (3)**  
Social foundations of attitudes and behavior: cognition, motivation, role-behavior, communication, small-group processes, racial attitudes, nationalism, and war. **First Session:** Section A; **Second Session:** Section B. MTWThF 9:40–11 am.
- 156 Psychology of Attitudes and Public Opinion (3)**  
Psychology of opinion formation, measurement of opinion, social determinants of attitudes, psychological processes in propaganda, bases of receptivity of propaganda, psychological warfare. **First Session:** MTWThF 11:10 am–12:30 pm.
- 191 Independent Research in Psychology (3)**  
Opportunity for work on individual library or experimental projects. Open to qualified students by permission; arrangements must be made with the sponsoring faculty member prior to registration. May be repeated once for credit. **First Session:** Section A; **Second Session:** Section B. Hours to be arranged.
- 196 History and Systems of Psychology (3)**  
Senior capstone course which includes a survey and integration of the major viewpoints and concepts of psychology. Required of psychology majors. **First Session:** MTWThF 1:10–2:30 pm.
- 209 Seminar: Psychology of Motivation (3)**  
Various theoretical approaches to the psychology of motivation; systematic concepts and experimental findings deriving from each approach. **First Session:** MWTh 6:10–8 pm.
- 212 Personality Assessment by Projective Techniques (3)**  
Emphasis on administration and scoring of the Rorschach Test. Prerequisite: Psychology 211. **Second Session:** MWTh 1:10–3 pm.
- 219 Seminar: Topics in Advanced Clinical Psychology (3)**  
Selected areas of research and theory in the general field of clinical psychology. Prerequisite: 6 semester hours in psychological assessment and permission of instructor. May be repeated for credit. Topics: Section A—Current Research Problems in Psychopathology; Section B—Psychological Assessment of Children. **First Session:** Section A; **Second Session:** Section B. MWTh 6:10–8 pm.

\* Primarily for students in the School of Engineering and Applied Science.



**220 Seminar: Abnormal Psychology (3)**

Study of selected problems in the field of abnormal psychology. **First Session:** MWTh 1:10-3 pm.

**283-84 Practicum in Clinical Psychology (3-3)**

Supervised practical instruction in agencies doing clinical psychological work. Prerequisite: Psychology 212. Admission by permission of instructor. **First Session:** Psychology 283A and 284A; **Second Session:** Psychology 283B and 284B. Hours to be arranged.

**289 Seminar: Current Topics in Experimental Psychology (3)**

Review and discussion of contemporary research and theory in specialized field of psychological study, by leaders in the field. May be repeated for credit. **First Session:** MWTh 8:10-10 pm.

**295 Independent Research in Psychology (arr.)**

Individual library or experimental research under supervision of staff member. Arrangements must be made with sponsoring faculty member prior to registration. May be repeated once for credit. **First Session:** Section A; **Second Session:** Section B. Hours to be arranged.

**299-300 Thesis (3-3)**

**Both Sessions:** hours to be arranged.

## Public Administration

K.E. Stromsem, *Chairman*

**\*213A Administration in Government (3)**

Critical analysis of federal administrative organizations as an integral part of the political system. Roles of Congress, the Presidency, the Courts, interest groups, political parties, and the public in the administrative process; special attention to centripetal and centrifugal forces. **First Session:** MWF 6:10-8 pm.

**221 Management in the Executive Branch (3)**

Analysis of application of management theory and practice in the Executive Branch of the Federal Government; emphasis on staff responsibilities and relationships and internal organization and control. **First Session:** MWF 8:10-10 pm.

**†251A Governmental Budgeting (3)**

Survey of the basic concepts, principles, and practices in governmental budgeting; interrelationship of planning, programming, and budgeting; their role in the management process. **Second Session:** MWF 8:10-10 pm.

\* A special section of this course, Public Administration 213B, for students in the Air Force Advanced Management Program, will be offered June 5 to July 28; hours to be arranged.  
 † A special section of this course, Public Administration 251B, for students in the Air Force Advanced Management Program, will be offered June 5 to July 28; hours to be arranged.



- 271 Readings and Research in Public Administration (3)**  
Advanced directed readings and research in specific areas of public administration. **Second Session:** MWF 6:10-8 pm.
- 299 Thesis Seminar (3)**  
Examination of thesis standards, research philosophy, and methodology. **First Session:** MWF 8:10-10 pm.
- 300 Thesis (3)**  
**Second Session:** hours to be arranged.

## Religion

R.G. Jones, *Chairman*

- 9 The Old Testament (3)**  
Historical and literary study of the Old Testament with consideration of development of religious ideas, institutions, and outstanding personalities. **First Session:** MTWThF 9:40-11 am.
- 59-60 History of Religions (3-3)**  
Religion 59: primitive and ancient national religions: Confucianism, Taoism, Buddhism, Hinduism, and Shintoism—their historical setting, founders, and development of religious thought and culture. Religion 60: Zoroastrianism, Judaism, Christianity, and Islam—analysis of their origin, evolution, and contemporary status. **First Session:** Religion 59; **Second Session:** Religion 60. MTWThF 11:10 am-12:30 pm.
- 122 Christian Ethics and Modern Society (3)**  
Nature and principles of Christian life as developed by the Christian community; problems of personal conduct; application to family, social, and economic institutions. **Second Session:** MTWThF 6-7:20 pm.
- 172 Religion in American Culture (3)**  
Growth of religious bodies and institutions in relation to American culture, development of religious thought, and analysis of the contemporary religious scene. **First Session:** MTWThF 6-7:20 pm.
- 291-92 Readings and Research (3-3)**  
Investigation of special problems. **First Session:** Religion 291; **Second Session:** Religion 292. Hours to be arranged.
- 299-300 Thesis (3-3)**  
**First Session:** Religion 299; **Second Session:** Religion 300.



## Slavic and Oriental Languages and Literatures

Helen Yakobson, *Chairman*

### 1-2 First-year Russian (3-3)

A year course: credit given on completion of Slavic 2. Beginners' course in fundamentals of grammar and pronunciation with graded reading, oral drill, and written practice. Listening comprehension and oral practice in language laboratory. Laboratory fee, \$17.50 a session. **First Session:** Slavic 1; **Second Session:** Slavic 2. Lecture MTWThF 9:40-11 am; laboratory\*.

### 47 Beginning Russian for Reading Examination Candidates (0)

For graduate students with little or no knowledge of Russian who intend to use the language as a research tool. No academic credit. Tuition fee, \$171. **First Session:** MTWThF 7:30-8:50 pm.

### 49 Russian Readings for Nonmajor Students (3)

Primarily for graduate students preparing for reading examinations. Undergraduates admitted with permission of instructor. No academic credit for graduate students. Prerequisite: Slavic 4, 6, 8, or 47; or equivalent. **Second Session:** MTWThF 7:30-8:50 pm.

### 91-92 Introduction to Russian Literature (3-3)

Survey of Russian literature, in translation, from earliest periods through literary masterpieces of the 19th and early 20th centuries. Lecture, recitation, and discussion—in English. **First Session:** Slavic 91; **Second Session:** Slavic 92. MTWThF 6-7:20 pm.

## Sociology†

R.W. Stephens, *Chairman*

### †1-2 Introductory Sociology (3-3)

Development of culture and personality, impact of groups and institutions on man's social behavior. Survey of fields within sociology. **First Session:** Sociology 1A—MTWThF 11:10 am-12:30 pm; Sociology 2A—MTWThF 6-7:20 pm. **Second Session:** Sociology 1B—MTWThF 9:40-11 am; Sociology 2B—MTWThF 6-7:20 pm.

### 41 American Social Problems (3)

Analysis of major social problems confronting the United States. Factors producing social problems, their nature and treatment. **Second Session:** MTWThF 7:30-8:50 pm.

### 51 Criminology (3)

(Formerly Sociology 136)

Nature and distribution of crime, police and court systems, prisons and reformatories; treatment and prevention of crime. **First Session:** MTWThF 9:40-11 am.

\*For laboratory sections, see Hourly Schedule, pages 89-95. All First Session language laboratories begin June 15.

† Sociology 1-2 is prerequisite to all other courses in Sociology except Sociology 41.



**124 Medical Sociology (3)**

Sociological factors and processes which relate to physical and mental health and disease, analysis of patterned social relationships in the field of health and medicine, the hospital as a social system. **First Session:** MTWThF 6-7:20 pm.

**127 Population Problems (3)**

Composition of populations, trends in population growth and population pressure, factors producing population movements, effects of migration, population policies: eugenics and birth control. **First Session:** MTWThF 11:10 am-12:30 pm.

**129 Race and Minority Groups (3)**

Analysis of the relationships between dominant and minority groups in society, particularly in the United States; nature and range of problems; analysis of the phenomenon of prejudice. **Second Session:** MTWThF 6-7:20 pm.

**135 Juvenile Delinquency (3)**

Factors producing delinquency, juvenile detention, the juvenile court, training schools, treatment of offenders. Prerequisite: Sociology 51. **Second Session:** MTWThF 11:10 am-12:30 pm.

**149 Development of Social Theory (3)**

Systematic study of the important schools of sociological theory, both European and American development; evaluation of scientific contributions of each school. **Second Session:** MTWThF 1:10-2:30 pm.

**191 Current Emphases in Sociology (3)**

Analysis and evaluation of recent developments in the general field of sociology and a review and discussion of basic concepts. Required course for all Sociology majors in the senior year. **First Session:** MTWThF 9:40-11 am.

**237 Seminar: Family Relations (3)**

Recent research and theory on aspects of family structure and functioning, their antecedents in the larger social order, and their consequences for individual family members. Special projects and papers. **First Session:** MTW 6:10-8 pm.

**295 Research (arr.)**

May be repeated once for credit. **First Session:** Section A; **Second Session:** Section B. Hours to be arranged.

**299-300 Thesis (3-3)**

**First Session:** Sociology 299; **Second Session:** Sociology 300. Hours to be arranged.



## Spanish \*

Administered by the Department of Romance Languages and Literatures,  
J.A. Frey, *Chairman*

### 1-2 First-year Spanish (3-3)

A year course: credit given on completion of Spanish 2. For beginners. Pronunciation, conversation, grammar, composition, reading of modern Spanish prose. Aural training, oral practice in language laboratory. Laboratory fee, \$17.50 a session. **First Session:** Spanish 1; **Second Session:** Spanish 2. Section A—MTWThF 9:40-11 am; Section B—MTWThF 6-7:20 pm; laboratory†.

### 3-4 Second-year Spanish (3-3)

A year course: credit given on completion of Spanish 4. Conversation, grammar, composition, reading of modern Spanish prose, introduction to Hispanic civilization. Aural training, oral practice in language laboratory. Laboratory fee, \$17.50 a session. **First Session:** Spanish 3; **Second Session:** Spanish 4. Section A—MTWThF 8:10-9:30 am; Section B—MTWThF 7:30-8:50 pm; laboratory†.

### 9-10 Spanish Conversation and Composition (3-3)

Prerequisite: Spanish 4 or equivalent and permission of instructor. **First Session:** Spanish 9; **Second Session:** Spanish 10. MTWThF 9:40-11 am.

### 11 Conversation and Composition (Honors Program) (3)

(See Language Study in Spain, page 36.)

### 51-52 Survey of Spanish Literature and Civilization (3-3)

Social, artistic, and cultural background of Spanish literature. Lectures, readings, recitations, and informal discussion. **First Session:** Spanish 51; **Second Session:** Spanish 52. MTWThF 1:10-2:30 pm.

### 53 History and Civilization (3)

(See Language Study in Spain, page 36.)

### 109 Advanced Spanish Conversation and Composition (3)

Prerequisite: Spanish 10 or equivalent and permission of instructor. **First Session:** MTWThF 1:10-2:30 pm.

### 155 Spanish American Literature in the Colonial Period (3)

Lectures, collateral reading, reports, and class analysis of important works. **First Session:** MTWThF 6-7:20 pm.

\* A standardized placement examination administered at registration is required of all entering students who wish to continue in college the language begun in high school. Upon completion of the examination assignment is made to the appropriate course with credit assigned on the usual basis.

Spanish 3-4 is required, and Spanish 51-52 is recommended, as prerequisite to all second-group courses.

† For laboratory sections, see the Hourly Schedule, pages 89-95. All First Session language laboratories begin June 15.



## Special Education

Perry Botwin, *Chairman*

### FIRST 3-WEEK EDUCATION WORKSHOP SESSION—JUNE 12 TO JUNE 30

Classes meet Monday through Friday. Each workshop course requires the full day; concurrent registration for another daytime course is not permitted. June 12 to 16—small group discussions, evening; June 19 to 30—small group discussions and field work, afternoon.

#### \*Educ 185 Teaching Younger Mentally Retarded Children (3)

Educational methods and curriculum for mentally retarded children of nursery and elementary school age at different levels of maturity. Organization and planning of instructional activities; selection and preparation of materials. Prerequisite: former Education 180 and 181, or permission of instructor. **June 12 to 16:** lecture 3:45–5:45 pm. **June 19 to 30:** lecture 10:10–12 am; conference 9:10–10 am.

#### 201 Education of Exceptional Children (3)

(Formerly Education 180)

For prospective teachers. Educational modifications necessary to accommodate children with mental, physical, social, and emotional deviations in a school program. Prerequisite: Psychology 22 or equivalent, and at least 6 semester hours of foundation courses in Education. **June 12 to 16:** lecture 3:45–5:45 pm. **June 19 to 30:** lecture 8:10–10 am; conference 10:10–11 am.

#### 240 Nature and Needs II: the Emotionally Disturbed (3)

(Formerly Education 187)

Analysis of educational provisions for seriously disturbed children: definitions, characteristics, identification, and programs for prevention and re-education. Admission by permission of instructor. **June 12 to 16:** lecture 3:45–5:45 pm. **June 19 to 30:** lecture 8:10–10 am; conference 10:10–11 am.

#### 260 Nature and Needs III: Crippled or Health Impaired (3)

(Formerly Education 329)

Theory of crippling or other health-impairing conditions as they affect the needs of children. Examination of curricula. Prerequisite: Special Education 201 and permission of instructor. **June 12 to 16:** lecture 3:45–5:45 pm. **June 19 to 30:** lecture 10:10–12 am; conference 9:10–10 am.

#### 291 Practicum in Teaching Emotionally Disturbed (6)

(Special Education 290, 291, 292 replace former Education 189)

Supervised classroom teaching of emotionally disturbed children. Student teaching fee, \$50. Minimum of 150 clock hours required. **A 6-week course: June 12 to July 21—hours to be arranged.**

\* Beginning with the fall semester 1967–68, Education 185 and 186 will become Special Education 203 Teaching Mentally Retarded Children (3).



**301 Psychology of Exceptional Children (3)**

(Formerly Education 321)

Research on social, emotional, physical, and learning characteristics of handicapped children. Admission by permission of instructor. **June 12 to 16:** lecture 3:45–5:45 pm. **June 19 to 30:** lecture 8:10–10 am; conference 10:10–11 am.

**SECOND 3-WEEK EDUCATION WORKSHOP SESSION—JULY 3 TO JULY 21**

Classes meet Monday through Friday. Concurrent registration for another day-time course is not permitted, because each workshop course requires the full day—lecture and conference in the morning; small group discussion and field work or laboratory in the afternoon.

**\*Educ 186 Teaching Older Mentally Retarded Children (3)**

Methods and curriculum for mentally retarded children of junior and senior high school age at different levels of maturity. Organization and planning of instructional activities; selection and preparation of materials. Prerequisite: former Education 180 and 181, or permission of instructor. Lecture 10:10–12 am; conference 9:10–10 am.

**202 Nature and Needs I: the Mentally Retarded (3)**

(Formerly Education 181)

Nature and needs of children with varying degrees of retardation. Causation and diagnosis of retardation; psychological and sociological implications. Principles of learning with respect to teaching retarded children. Prerequisite: Psychology 22 or equivalent, and at least 6 semester hours of foundation courses in Education. Lecture 8:10–10 am; conference 10:10–11 am.

**303 Administration and Supervision of Special Education (3)**

(Formerly Education 323)

Philosophy and nature of special education; program organization, administration, and development. Surveying local level needs; program evaluation and supervision. Admission by permission of instructor. Lecture 8:10–10 am; conference 10:10–11 am.

**305 Tests and Measurements for Exceptional Children (3)**

(Formerly Education 244)

Materials and methods of psychological, psychometric, and educational tests used in diagnosing and securing information concerning exceptional children. Admission by permission of instructor. Lecture 10:10–12 am; conference 9:10–10 am.

**342 Seminar: Emotional Disturbance (3)**

(Formerly Education 315)

Advanced design and administration of programs for emotionally disturbed children in various settings: community factors in program planning, working with multi-disciplinary team, professional ethics and responsibilities, sociocultural considerations of deviancy and normalcy. Admission by permission of instructor. Lecture 8:10–10 am; conference 10:10–11 am.

\* Beginning with the fall semester 1967–68, Education 185 and 186 will become Special Education 203 Teaching Mentally Retarded Children (3).



**360 Medical Aspects of Exceptional Children (3)***(Formerly Education 327)*

Adaptation problems of crippled or other health-impaired children. Causes and treatment of major medical disorders. Planning child's environment to meet his special needs. Gross heart specimen dissection demonstrated. Prerequisite: Special Education 201 and permission of instructor. Lecture 8:10-10 am; conference 10:10-11 am.

**THIRD 3-WEEK WORKSHOP SESSION—JULY 24 TO AUGUST 11**

Classes meet Monday through Friday. Concurrent registration for another day-time course is not permitted, because each workshop course requires the full day—lecture and conference in the morning; small group discussion and field work or laboratory in the afternoon.

**306 Guidance and Counseling of Exceptional Children (3)***(Formerly Education 246)*

Educational, mental, social, vocational guidance of exceptional children and youth. Role of teacher in parent counseling. Community agencies involved in postschool rehabilitation, guidance, and recreational service for exceptional children. Admission by permission of instructor. Lecture 10:10-12 am; conference 9:10-10 am.

**340 Mental Health of Culturally Deprived and Emotionally Disturbed Children (3)***(Formerly Education 313)*

Mental health problems affecting the culturally deprived child's vocational, educational, and emotional needs; teacher-child relationships; language differences in socioeconomic environments. Lecture 10:10-12 am; conference 9:10-10 am.

**341 Etiology and Treatment of Emotional Disturbance (3)***(Formerly Education 314)*

Better understanding through psychiatry of causes for and treatment of serious emotional disturbance and social maladjustment. Admission by permission of instructor. Lecture 8:10-10 am; conference 9:10-10 am.

**361 Neurological Aspects of Exceptional Children (3)***(Formerly Education 326)*

Medically oriented approach. Etiology of gross disorders of central nervous system and brain such as poliomyelitis, brain injury, aphasia, arthritis, epilepsy, spina bifida, and related conditions. Gross brain specimen dissection demonstrated. Prerequisite: Special Education 201 and permission of instructor. Lecture 8:10-10 am; conference 9:10-10 am.

**Speech and Drama**

L.P. Leggette, *Chairman*

**A Speech and Hearing Clinic**

Individual or group lessons, without academic credit, for such speech difficulties as lisping, cleft palate, articulatory problems, and stuttering. Fee:



for individual lesson, \$10; for group lesson, \$5. **Both Sessions:** hours to be arranged.

### 1 Effective Speaking (3)

Preparation and delivery of extempore speeches, developing confidence and poise, body and voice control; selecting and organizing material. Recording fee, \$2. **First Session:** Section A—MTWThF 11:10 am–12:30 pm; Section B—MTWThF 7:30–8:50 pm. **Second Session:** Section C—MTWThF 11:10 am–12:30 pm.

### 11 Voice and Diction (3)

Developing ease, naturalness, and clarity in the speaking voice. Analysis of individual voices through recordings. Phonetic approach to study of sounds of English, standards of speech. Class instruction in problems of rate, volume, pitch, quality. Recording fee, \$4. **First Session:** Section A—MTWThF 9:40–11 am; Section B—MTWThF 6–7:20 pm. **Second Session:** Section C—MTWThF 9:40–11 am.

### 32 Oral Reading (3)

Reading to others, theory and practice in problems of interpreting the printed page. Prerequisite: Speech and Drama 11. Recording fee, \$2. **First Session:** MTWThF 11:10 am–12:30 pm.

### 121 Group Discussion and Conference Leadership (3)

Process of thinking and problem solving in committees and small groups; methods of leading discussions and conferences. Prerequisite: 6 hours of speech or permission of instructor. **First Session:** MTWThF 1:10–2:30 pm.

### 157 Workshop in Producing Shakespeare (2)

June 12 to August 31. (See Workshop in Shakespeare, page 36.)

### 183 Clinical Procedures in Speech and Hearing (1)

(Formerly *Clinical Practice in Speech and Hearing*)

Method, theory, and practice in preparation of therapeutic objectives and materials; practice and observation in speech and hearing evaluation. May be repeated for a total of 3 semester hours. Prerequisite: Speech and Drama 172 or 182. **First Session:** hours to be arranged.

### 184 Clinical Practice in Speech and Hearing (1)

Supervised case work in speech and hearing—the University Speech and Hearing Clinic and selected off-campus facilities. May be repeated for a total of 3 semester hours. Prerequisite or concurrent registration: Speech and Drama 183. **Second Session:** hours to be arranged.

### 277 Advanced Clinical Procedures in Speech and Hearing (1)

(Formerly *Advanced Clinical Practice in Speech and Hearing*)

**First Session:** hours to be arranged.

### 278 Advanced Clinical Practice in Speech and Hearing (1)

**Second Session:** hours to be arranged.

### 291 Seminar: Speech Pathology (3)

Offered in such areas as articulatory problems and delayed speech, apha-



sia, voice difficulties and cleft palate, stuttering, cerebral palsy, and allied disorders. **First Session:** TWTh 1:10-2:50 pm.

**295 Independent Research in Speech and Hearing (arr.)**

May be repeated for credit. **First Session:** Section A; **Second Session:** Section B. Hours to be arranged.

**299-300 Thesis (3-3)**

**First Session:** Speech and Drama 299; **Second Session:** Speech and Drama 300.

## Statistics

Solomon Kullback, *Chairman*

**\*51 Introduction to Business and Economic Statistics (3)**

Elementary principles for analyzing and interpreting statistical data; characteristic values; measures of variability, sampling, time series analysis, and simple correlation. Laboratory fee, \$9. **First Session:** lecture MWF 9:40-11 am, laboratory TTh 9:40-11 am and 1 hour to be arranged.

**\*53 Introduction to Statistics in Psychology and Education (3)**

Averages, dispersion, raw and derived scores, frequency distributions, normal curve, correlation, elementary sampling, introduction to estimation and tests of hypotheses. Laboratory fee, \$9. **Second Session:** lecture MWF 9:40-11 am, laboratory TTh 9:40-11 am and 1 hour to be arranged.

**\*91 Principles of Statistical Methods (3)**

Variables and attributes, averages and dispersion, frequency distributions and their characteristics, regression and correlation, statistical decision processes. Laboratory fee, \$9. **First Session:** lecture MWF 1:10-2:30 pm, laboratory TTh 1:10-2:30 pm and 1 hour to be arranged.

**97 Introduction to Computer Programming (3)**

Computer and programming concepts. High-level language programs written by students will be run on the University computer. Laboratory fee, \$20. **First Session:** lecture MWF 6-7:20 pm, laboratory TTh 6-7:20 pm.

**†104 Statistics in the Behavioral Sciences and Education I (3)**

Introductory study of statistical techniques for research problems in behavioral sciences and education. Laboratory fee, \$9. **Second Session:** lecture MWF 1:10-2:30 pm, laboratory TTh 1:10-2:30 pm and 1 hour to be arranged.

\* Prerequisite: one entrance unit in algebra. Statistics 51, 53, and 91 are related in their subject matter, and credit hours for only one of the three may be applied toward a degree. Statistics 91 is for Statistics majors, for students in engineering and in the biological and physical sciences.  
† May not be taken for credit by students who have received credit for statistics 51, 53, or 91.



**107 Statistics for Engineers (3)**

Probability models, discrete and continuous distributions, sampling, hypothesis testing and estimation, engineering applications. Prerequisite: differential and integral calculus. An 8-week course: June 13 to August 4—TTh 5:30–8 pm.

**118 Correlation and the Chi-square Test (3)**

Regression and correlation theory: simple, partial, and multiple; contingency table analysis; tests of goodness of fit. Prerequisite: 3 semester hours selected from Statistics 91, 104, 107. Laboratory fee, \$9. First Session: lecture MWF 3:20–5 pm, laboratory TTh 3:40–5 pm.

**119 Bases of Statistical Decision Making (arr.)**

For students in the Navy Graduate Financial Management program only. Introduction to techniques of decision making, with emphasis on applications rather than theory. Includes: binomial distribution, normal distribution, Type I and II errors, estimation, research methodology, and problems of inference. June 5 to July 28: lecture TTh 9:40–11:20 am; laboratory TTh 8:10–9:30 am.

**120 Principles of Statistical Analysis (3)**

For students in the Air Force Advanced Management program only. Introduction to the basic concepts of statistical analysis, measures of central tendency, dispersion, normal distribution, basic statistical inference including estimation and testing hypotheses. June 5 to July 28: lecture MW 9:40–11:20 am; laboratory MW 8:10–9:30 am.

**155 Introduction to Probability (3)**

Probability distributions, Bayes' theorem and postulate, Bernoulli's theorem and its experimental verification, mathematical expectations, laws of large numbers. Prerequisite: one entrance unit in algebra. First Session: MWF 5:30–8 pm.

**298 Seminar: Combinatorial Probability (3)**

An 8-week course: June 13 to August 4—TTh 4:10–6 pm.



## HOURLY SCHEDULE\*

### FIRST SESSION, JUNE 12 TO JULY 19

#### MORNING CLASSES

8:10	9:40	11:10
Art 107 (to 9:30)	Acct 1A (to 11)	Anth 153 (to 12:30)
Chem 11 (MWF to 1; TTh to 11:10)	Anth 1 (to 11)	Art 71 (to 12:30)
Chem 22 (to 12:30)	Art 31 (to 11)	Art 101 (to 12:30)
Chem 51 (to 12:30)	Art 41 (9-12)	B Ad 141 (to 12:30)
Econ 101 (to 9:30)	Art 42 (9-12)	C1 L 109 (to 12:30)
Fren 1A lect (to 9:30)	Art 51 (9-12)	C1 L 124A (to 12:30)
Fren F3L1 (MTh 8:40- 9:30)	Art 52 (9-12)	Econ 181 (to 12:30)
Germ G1L1 (MTh 8:40- 9:30)	Art 61 (9-12)	Engl 1 (to 12:30)
Germ G3L1 (MTh 8:40- 9:30)	Art 65 (9-12)	Engl 72A (to 12:30)
Ital 1 lect (to 9:30)	Art 66 (9-12)	Engl 139 (to 12:30)
Ital It3L1 (MTh 8:40- 9:30)	Art 81 (9-12)	Geol 1 lab (to 1)
Math 9A (to 9:30)	Art 82 (9-12)	Germ G1L2 (MTh to 12)
Phil 172 (to 9:30)	Art 114 (to 11)	Germ 3A lect (to 12:30)
Phys 1A rec (WF 8:30- 10)	Art 143 (9-12)	Hist 71A (to 12:30)
P Sc 119 (to 9:30)	Art 179 (9-12)	Hist 112 (to 12:30)
P Sc 162 (to 9:30)	Art 180 (9-12)	Hist 275 (MWF to 1)
Span S1L1 (TF 8:40- 9:30)	Art 189 (9-12)	Math 21A-1 (to 12:30)
Span 3A lect (to 9:30)	Art 190 (9-12)	Math 21A-2 (to 12:30)
	Art 279 (9-12)	Mus 3A (to 12:30)
	Art 280 (9-12)	PE M 1 (to 12:30)
	Art 281 (9-12)	PE M 11 (to 12:30)
	B Sc 1A (to 1)	PE W 1A (11:15-12:15)
	C1 L 1 (to 11)	PE W 11A (11:15- 12:15)
	C1 L 17 (to 11)	P Sc 9A (to 12:30)
	Econ 1A (to 11)	P Sc 145 (to 12:30)
	Engl 1x (to 11:50)	P Sc 160 (to 12:30)
	Engl 71 (to 11)	P Sc 172 (to 12:30)
	Engl 130 (to 11)	P Sc 190 (to 12:30)
	Engl 175 (to 11)	Psyc 156 (to 12:30)
	Fren F1L1 (MTh to 10:30)	Rel 59 (to 12:30)
	Fren 3A lect (to 11)	Slav R1L1 (MTh to 12)
	Fren 9 (to 11)	Soc 1A (to 12:30)
	Fren 129 (to 11)	Soc 127 (to 12:30)
	Geog 51 (to 11)	Sp&D 1A (to 12:30)
	Geol 1 lect (to 11)	Sp&D 32 (to 12:30)
	Germ 1A lect (to 11)	
	Hist 39A (to 11)	
	Hist 175 (to 11)	
	Ital It1L1 (MTh to 10:30)	
	Ital 3 lect (to 11)	
	Math 15 (to 11)	
	Math 122 (to 11)	
	Mus 103 (to 11)	
	Phil 51 (to 11)	

\* Classes meet Monday through Friday unless otherwise indicated. Seminars and research courses for which hours are to be arranged, courses in Law, and courses in the School of Education will be found under the departmental announcements.



MORNING CLASSES (*Continued*)

8:10	9:40	11:10
	Phys 1A lab (MWF 10:10–12:30)	
	P Sc 10 (to 11)	
	P Sc 167 (to 11)	
	P Sc 171 (to 11)	
	Psyc 1A (to 11)	
	Psyc 8A (to 11)	
	Psyc 151A (to 11)	
	Rel 9 (to 11)	
	Slav 1 lect (to 11)	
	Soc 51 (to 11)	
	Soc 191 (to 11)	
	Span 1A lect (to 11)	
	Span S3L1 (TF to 10:30)	
	Span 9 (to 11)	
	Sp&D 11A (to 11)	
	Stat 51 lect (MWF to 11)	
	Stat 51 lab (TTh to 11)	

## AFTERNOON CLASSES

1:10	4:10
Art 1A (to 2:30)	B Ad 118 (to 5:30)
Art 125 (1–4)	Fren F3L2 (MTh 5–5:50)
Art 126 (1–4)	Fren 256 (to 5:30)
Art 127 (1–4)	Geol 172 lab (TWTh 3:45–6)
Art 128 (1–4)	Germ G1L3 (MTh 5–5:50)
Art 131 (1–4)	Germ G3L3 (MTh 5–5:50)
Art 132 (1–4)	Math 10A (to 5:30)
Art 137 (1–4)	Mus 5 (to 5:30)
Art 138 (1–4)	Phys 1B lab (MWF 3:10–5:30)
Art 144 (1–4)	Psyc 131 (to 5:30)
Art 157 (1–4)	Stat 118 lect (MWF 3:20 to 5)
Art 158 (1–4)	Stat 118 lab (TTh 3:40 to 5)
Art 261 (to 2:30)	*Stat 298 (TTh 4:10–6)
Art 265 (1–4)	
Art 266 (1–4)	
Art 275 (1–4)	
B Ad 51 (to 2:30)	
Engl 170 (to 2:30)	
Fren 51 (to 2:30)	
Fren 109 (to 2:30)	
Geog 52 (to 2:30)	
Geol 172 lect (MTWTh 2:10–3:35)	



AFTERNOON CLASSES (Continued)

1:10

Germ G3L2 (MTh to 2)  
 Hist 109 (to 2:30)  
 Hist 182 (to 2:30)  
 Math 23 (to 2:30)  
 Mus 121 (to 2:30)  
 PE W 1B (1:30-2:30)  
 PE W 11B (1:30-2:30)  
 Phys 1A lect (MTTh to 3)  
 Phys 1B lect (MTTh to 3)  
 Phys 1B rec (WF 1:30-3)  
 P Sc 181 (to 2:30)  
 Psc 101A (to 2:30)  
 Psc 196 (to 2:30)  
 Psc 220 (MWTh to 3)  
 Span 51 (to 2:30)  
 Span 109 (to 2:30)  
 Sp&D 121 (to 2:30)  
 Sp&D 291 (TWTh to 2:50)  
 Stat 91 lect (MWF to 2:30)  
 Stat 91 lab (TTh to 2:30)

EVENING CLASSES

6:00

Acct 1B (to 7:20)  
 Acct 115A (to 7:20)  
 \*Acct 121 (MWF to 7:25)  
 \*Acct 275 (TTh 6:10-8)  
 B Sc 1B (to 9:20)  
 B Sc 127 (to 7:20)  
 B Sc 148 (to 9:20)  
 B Ad 105 (to 7:20)  
 B Ad 191 (to 7:20)  
 B Ad 241 (MWF 6:10-8)  
 B Ad 273 (MWF 6:10-8)  
 B&PA 221 (MWF 6:10-8)  
 B&PA 287 (MWF 6:10-8)  
 Chem 111 (to 7:20)  
 Chin 1 lect (to 7:20)  
 Econ 1B (to 7:20)  
 Econ 217 (MWTh to 8)  
 Engl A (to 7:20)  
 Engl 52A (to 7:20)  
 Engl 173 (to 7:20)  
 Engl 192 (to 7:20)  
 Fren FIL2 (MTh 6:30-7:20)

7:30

Acct 111 (to 8:50)  
 Chin C1L1(MTh to 8:20)  
 Engl B (to 8:50)  
 Engl 51 (to 8:50)  
 Fren 1B lect (to 8:50)  
 Germ G1L4 (MTh to 8:20)  
 Germ 3B lect (to 8:50)  
 Math 6A (to 8:50)  
 Math 111 (to 8:50)  
 Math 139 (to 8:50)  
 P Sc 161 (to 8:50)  
 Psc 1B (to 8:50)  
 Slav 47 (to 8:50)  
 Span S1L2 (TF to 8:20)  
 Span 3B lect (to 8:50)  
 Sp&D 1B (to 8:50)

8:10

B Ad 299 (MWF to 10)  
 B&PA 201A (MWF to 10)  
 Psc 289 (MWTh to 10)  
 P Ad 221 (MWF to 10)  
 P Ad 299 (MWF to 10)

\* June 13 to August 4



EVENING CLASSES (*Continued*)

6:00	
Fren 3B lect (to 7:20)	
Fren 49 (to 7:20)	
Germ 1B lect (to 7:20)	
Germ G3L4 (MTh 6:30–7:20)	
Germ 47 (to 7:20)	
Hist 40A (to 7:20)	
Hist 72A (to 7:20)	
Math 3A (to 7:20)	
Math 22A (to 7:20)	
Math 113 (MTWTh to 7:40)	
Math 250 (to 7:20)	
Mus 4A (to 7:20)	
Phil 152 (to 7:20)	
Phys 167 (to 7:20)	
Psyc 118 (to 7:20)	
Psyc 144 (to 7:20)	
Psyc 209 (MWTh 6:10–8)	
Psyc 219A (MWTh 6:10–8)	
P Ad 213A (MWF 6:10–8)	
Rel 172 (to 7:20)	
Slav 91 (to 7:20)	
Soc 2A (to 7:20)	
Soc 124 (to 7:20)	
Soc 237 (MTW 6:10–8)	
Span 1B lect (to 7:20)	
Span S3L2 (TF 6:30–7:20)	
Span 155 (to 7:20)	
Sp&D 11B (to 7:20)	
Stat 97 lect (MWF to 7:20)	
Stat 97 lab (TTh to 7:20)	
*Stat 107 (TTh 5:30–8)	
Stat 155 (MWF 5:30–8)	

## SECOND SESSION, JULY 20 TO AUGUST 25

## MORNING CLASSES

8:10	9:40	11:10
Art 149 (to 9:30)	Art 32 (to 11)	Art 72 (to 12:30)
AT&C 120 (to 9:30)	Art 105 (to 11)	Art 109 (to 12:30)
Chem 12 (MWF to 1; TTh to 11:10)	Art 123 (9–12)	C1 L 110 (to 12:30)
Chem 52 (to 1:30)	Art 124 (9–12)	Econ 102 (to 12:30)
Fren 2A lect (to 9:30)	Art 153 (9–12)	Engl 4 (to 12:30)
	Art 154 (9–12)	Engl 136 (to 12:30)



MORNING CLASSES (Continued)

8:10	9:40	11:10
Fren F4L1 (MTh 8:40-9:30)	B Sc 2A (to 11)	Geol 2 lab (to 1)
Germ G2L1 (MTh 8:40-9:30)	C1 L 2 (to 11)	Germ G2L2 (MTh to 12)
Germ G4L1 (MTh 8:40-9:30)	C1 L 18 (to 11)	Germ 4A lect (to 12:30)
Hist 72B (to 9:30)	C1 L 124B (to 11)	Hist 262 (MWF to 1)
Hist 173 (to 9:30)	Econ 2A (to 11)	Math 22B-1 (to 12:30)
Ital 2 lect (to 9:30)	Engl 2 (to 11)	Math 22B-2 (to 12:30)
Ital It4L1 (MTh 8:40-9:30)	Engl 72B (to 11)	Math 124 (to 12:30)
Phys 2A rec (WF 8:30-10)	Engl 176 (to 11)	Mus 4B (to 12:30)
P Sc 151 (to 9:30)	Fren F2L1 (MTh to 10:30)	PE M 2 (to 12:30)
Psyc 1C (to 9:30)	Fren 4A lect (to 11)	PE M 12 (to 12:30)
Psyc 101B (to 9:30)	Fren 10 (to 11)	PE W 2A (11:15-12:15)
Span S2L1 (TF 8:40-9:30)	Geog 127 (to 11)	PE W 12A (11:15-12:15)
Span 4A lect (to 9:30)	Geol 2 lect (to 11)	P Sc 115 (to 12:30)
	Germ 2A lect (to 11)	P Sc 120 (to 12:30)
	Hist 40B (to 11)	Psyc 8B (to 12:30)
	Hist 164 (to 11)	Rel 60 (to 12:30)
	Ital It2L1 (MTh to 10:30)	Slav R2L1 (MTh to 12)
	Ital 4 lect (to 11)	Soc 135 (to 12:30)
	Math 10B (to 11)	Sp&D 1C (to 12:30)
	Math 16 (to 11)	
	Mus 104 (to 11)	
	Phil 52 (to 11)	
	Phys 2A lab (MWF 10:10-12:30)	
	P Sc 9B (to 11)	
	P Sc 107 (to 11)	
	Psyc 22B (to 11)	
	Psyc 151B (to 11)	
	Slav 2 lect (to 11)	
	Soc 1B (to 11)	
	Span 2A lect (to 11)	
	Span S4L1 (TF to 10:30)	
	Span 10 (to 11)	
	Sp&D 11C (to 11)	
	Stat 53 lect (MWF to 11)	
	Stat 53 lab (TTh to 11)	



## AFTERNOON CLASSES

1:10	4:10
Art 1B (to 2:30)	Art 118 (to 5:30)
Art 113 (to 2:30)	B Ad 131 (to 5:30)
Art 163 (1-4)	Fren F4L2 (MTh 5-5:50)
Art 164 (1-4)	Germ G2L3 (MTh 5-5:50)
Econ 1C (to 2:30)	Germ G4L3 (MTh 5-5:50)
Engl 169 (to 2:30)	Math 9B (to 5:30)
Fren 52 (to 2:30)	Mus 6 (to 5:30)
Germ G4L2 (MTh to 2)	Phys 2B lab (MWF 3:10-5:30)
Hist 245 (MWF 2-4)	P Sc 111 (to 5:30)
Hist 372 (TTh to 4)	
Math 24 (to 2:30)	
Phil 193 (to 2:30)	
PE W 2B (1:30-2:30)	
PE W 12B (1:30-2:30)	
Phys 2A lect (MTTh to 3)	
Phys 2B lect (MTTh to 3)	
Phys 2B rec (WF 1:30-3)	
Psyc 29 (to 2:30)	
Psyc 212 (MWTh to 3)	
Soc 149 (to 2:30)	
Span 52 (to 2:30)	
Stat 104 lect (MWF to 2:30)	
Stat 104 lab (TTh to 2:30)	

## EVENING CLASSES

6:00	7:30	8:10
Acct 2 (to 7:20)	Acct 193 (to 8:50)	Acct 215A (MWF to 10)
Acct 115B (to 7:20)	Chin C2L1 (MTh to 8:20)	B&PA 201B (MWF to 10)
Acct 132 (to 7:20)	Engl 52B (to 8:50)	P Ad 251A (MWF to 10)
B Sc 2B (to 9:20)	Fren 2B lect (to 8:50)	
B Sc 145 (to 8:50)	Germ G2L4 (MTh to 8:20)	
B Ad 102 (to 7:20)	Germ 4B lect (to 8:50)	
B Ad 209 (MWF 6:10-8)	Hist 137 (to 8:50)	
B Ad 232 (MWF 6:10-8)	Math 3B (to 8:50)	
B&PA 207 (MWF 6:10-8)	Math 112 (to 8:50)	
B&PA 268 (MWF 6:10-8)	Math 140 (to 8:50)	
Chem 112 (to 7:20)	Slav 49 (to 8:50)	
Chin 2 lect (to 7:20)	Soc 41 (to 8:50)	
Econ 2B (to 7:20)	Span S2L2 (TF to 8:20)	
Econ 121 (to 7:20)	Span 4B lect (to 8:50)	
Engl 141 (to 7:20)		
Engl 195 (to 7:20)		
Fren F2L2 (MTh 6:30-7:20)		
Fren 4B lect (to 7:20)		
Germ 2B lect (to 7:20)		
Germ G4L4 (MTh 6:30-7:20)		
Germ 49A-1 (to 7:20)		
Germ 49A-2 (to 7:20)		
Hist 39B (to 7:20)		
Hist 71B (to 7:20)		



EVENING CLASSES (Continued)

6:00

- Math 6B (to 7:20)
- Math 21B (to 7:20)
- Math 157 (to 7:20)
- Mus 3B (to 7:20)
- Phys 116 (to 7:20)
- Phys 170 (to 7:20)
- P Sc 112 (to 7:20)
- P Sc 177 (to 7:20)
- Psyc 1D (to 7:20)
- Psyc 145 (to 7:20)
- Psyc 219B (MWTh 6:10-8)
- P Ad 271 (MWF 6:10-8)
- Rel 122 (to 7:20)
- Slav 92 (to 7:20)
- Soc 2B (to 7:20)
- Soc 129 (to 7:20)
- Span 2B lect (to 7:20)
- Span S4L2 (TF 6:30-7:20)



# ANNUAL ISSUES OF THE UNIVERSITY BULLETIN

7:10	8:10	9:10
Art 118 (to 7:30)	Art 118 (to 8:30)	(to 9:30) 8:30
Art 113 (to 7:30)	B Ad 131 (to 8:30)	(to 9:30) 8:30
Art 163 (1-4)	Free P4 3 (MTh 3-5:30)	(to 9:30) 8:30
Art 163 (1-4)	Germ 121.3 (MTh 3-5:30)	(to 9:30) 8:30
Enon 10 (to 7:30)	Germ 121.3 (MTh 3-5:30)	(to 9:30) 8:30
Engl 159 (to 7:30)	Math 9B (to 8:30)	(to 9:30) 8:30
Free 32.4 (to 7:30)	Math 9 (to 8:30)	(to 9:30) 8:30
Germ 121.2 (MTh 3-5:30)	Phys 2B lab (MWF 1:10-5:30)	(to 9:30) 8:30
Math 101 (MWF 2-4)	Phys 111 (to 8:30)	(to 9:30) 8:30
Math 101 (MTh 3-5:30)		(to 9:30) 8:30
Math 101 (to 7:30)		(to 9:30) 8:30

*Requests for the following publications must include zip code and should be addressed as indicated.*

- COLLEGE OF GENERAL STUDIES, Dean of the College
- NATIONAL LAW CENTER, Dean of the Center
- STUDENT FINANCIAL AID, Office of Student Financial Aid
- SCHOOL OF ENGINEERING AND APPLIED SCIENCE, Dean of the School
- UNDERGRADUATE AND GRADUATE CATALOGUE (Arts and Sciences, Education, Government and Business, Public and International Affairs), Office of Admissions
- SCHOOL OF MEDICINE, Admissions Office, School of Medicine
- SUMMER SESSIONS, Dean of the Summer Sessions
- SCHEDULE OF CLASSES: FALL AND SPRING SEMESTERS, Registrar
- SCHEDULE OF CLASSES: SUMMER SESSIONS, Dean of the Summer Sessions

Jessie Bigelow Martin, A.B., *Editor of Academic Publications*

B Ad 131 (MWF 10-12)	Math 3B (to 12:30)
BAPA 167 (MWF 8:30-10)	Math 112 (to 8:30)
BAPA 288 (MWF 8:30-10)	Math 105 (to 8:30)
Chem 111 (to 7:30)	Stat 49 (to 8:30)
Chem 102 (to 7:30)	Stat 41 (to 8:30)
Enon 28 (to 7:30)	Stat 42.1 (to 8:30)
Enon 121 (to 7:30)	Stat 42.2 (to 8:30)
Engl 141 (to 7:30)	
Engl 155 (to 7:30)	
Free 32.2 (MTh 3-5:30)	
Free 4B lab (to 7:30)	
Germ 121.2 (to 7:30)	
Germ 121.3 (MTh 3-5:30)	
Germ 121.4 (to 7:30)	
Germ 121.5 (to 7:30)	
Math 101 (to 7:30)	
Math 101 (to 7:30)	



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# REQUEST FOR APPLICATION FOR ADMISSION TO 1967 SUMMER SESSIONS

(Note: Students who are registered at The George Washington University during the spring semester 1966-67 should NOT fill out an application for admission to the Summer Sessions but should report to the Registrar's Office on registration day. All others should fill out this card and mail to the Dean of the Summer Sessions to obtain the proper application form.)

- My status is: ☐ New student entering a degree program  
☐ New student not working toward a degree at GWU  
☐ Former student at GWU, registered prior to the 1967 spring semester, wishing to re-enroll in a degree program  
☐ Former student at GWU, registered prior to the 1967 spring semester, wishing to re-enroll in nondegree status  
☐ Student wishing to apply for admission to the National Law Center

Mail application form to:

Mr.

Mrs.

Miss

No.

Street

City

State

Zip Code



Place a  
Four-cent  
Stamp Here

DEAN OF THE SUMMER SESSIONS  
THE GEORGE WASHINGTON UNIVERSITY  
WASHINGTON, D. C. 20006



## COLLEGES AND SCHOOLS—DEGREE PROGRAMS

COLUMBIAN COLLEGE OF ARTS AND SCIENCES: Associate in Arts (A.A.), Bachelor of Arts (A.B.), Bachelor of Science (B.S.), Bachelor of Science in Medical Technology (B.S. in Med. Tech.)

GRADUATE SCHOOL OF ARTS AND SCIENCES: Master of Arts (A.M.), Master of Fine Arts (M.F.A.), Master of Music (Mus.M.), Master of Science (M.S.), and Doctor of Philosophy (Ph.D.)

SCHOOL OF MEDICINE: Doctor of Medicine (M.D.)

NATIONAL LAW CENTER: Bachelor of Laws (LL.B.), Master of Laws (LL.M.), Master of Comparative Law (M.Comp.L.), and Doctor of Juridical Science (S.J.D.)

SCHOOL OF ENGINEERING AND APPLIED SCIENCE: Engineering Technologist Certificate (E.T.C.), Bachelor of Science (B.S.), Master of Science (M.S.), Master of Engineering Administration (M.E.A.), and Doctor of Science (D.Sc.)

SCHOOL OF EDUCATION: Bachelor of Arts in Education (A.B. in Ed.), Bachelor of Science in Physical Education (B.S. in P.E.), Master of Arts in Teaching (A.M. in T.), Master of Arts in Education (A.M. in Ed.), Education Specialist (Ed.S.), and Doctor of Education (Ed.D.)

SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION: Bachelor of Business Administration (B.B.A.), Master of Arts in Government (A.M. in Govt.), Master of Business Administration (M.B.A.), Master of Public Administration (M.P.A.), Graduate Certificate in Health Care Administration (Grad. Cert. in H.C.A.), Doctor of Business Administration (D.B.A.), and Doctor of Public Administration (D.P.A.)

SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS: Bachelor of Arts (A.B.), Certificate of the Institute for Sino-Soviet Studies (Cert. of I.S.S.S.), and Master of Arts A.M.)

COLLEGE OF GENERAL STUDIES: Bachelor of Science in General Studies (B.S. in Gen. Std.), Bachelor of Business Administration (B.B.A.), Bachelor of Science in Geodetic and Cartographic Science (B.S. in Geod. and Cart Sc.), Master of Science in Business Administration (M.S. in B.A.), Master of Science in Financial Management (M.S. in Fin. Mgt.), Master of Science in Governmental Administration (M.S. in Govt. Adm.), Master of Science in International Affairs (M.S. in I.A.), Master of Science in Personnel Administration (M.S. in Per. Adm.), and Master of Science in Public Administration (M.S. in P.A.)



## THE GEORGE WASHINGTON UNIVERSITY

COLUMBIAN COLLEGE OF ARTS AND SCIENCES, 1821

THE GRADUATE SCHOOL OF ARTS AND SCIENCES, 1893

THE SCHOOL OF MEDICINE, 1825

THE NATIONAL LAW CENTER, 1865

THE SCHOOL OF ENGINEERING AND APPLIED SCIENCE, 1884

THE SCHOOL OF EDUCATION, 1907

THE SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION, 1928

THE SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS, 1928

THE COLLEGE OF GENERAL STUDIES, 1950

THE DIVISION OF UNIVERSITY STUDENTS, 1930

THE SUMMER SESSIONS, 1916

THE UNIVERSITY HOSPITAL, 1898



THE GEORGE WASHINGTON UNIVERSITY BULLETIN

THE  
UNIVERSITY  
RECORD

vi  
¢

1966-1967







# DEGREES CONFERRED

September 30, 1966

## COLUMBIAN COLLEGE OF ARTS AND SCIENCES

### THE UNIVERSITY RECORD

1966-1967

John M. Apantaku, District of Columbia	James Bruce Conner, Maryland
Mathematics	Sociology
John For Avenue, New Mexico	James Ann Church, Virginia
Political Science	Advertising Design
John Carroll Beardsley, District of Columbia	John Fry Darlington, District of Columbia
Psychology	Psychology
John S. Bickford, New York	Myra Tolmach Datta, Virginia
Economics	Art History and Theory
John Burt Park, New York	Patricia Ann De Young, Virginia
Psychology	Economics
John C. Bowles Jr., District of Columbia	Edith Brant Dutton, Virginia
Psychology	Psychology
John A. Brooks, Virginia	Sam Childers Dyer, Maryland
Law and Public Administration	English Literature (each semester)
John A. Brooks, Pennsylvania	Ellen O'Neil Duffey, District of Columbia
Political Science	Psychology
John C. Brooks, The Virginia	John Thomas Turner, Maryland
Political Science	Political Science
John C. Brice, District of Columbia	Gavin Mallory Felt, Maryland
Political Science	History
John C. Brice, Virginia	Rodney Elger, District of Columbia
Political Science	Psychology
John C. Brice, Virginia	Paul Freeman, Maryland
Political Science	Advanced Theory and Criticism
John C. Brice, Maryland	Ann Louise Gendron, District of Columbia
Political Science	French Language and Literature
John C. Brice, Maryland	Catherine Grace Geller, Virginia
Political Science	Drawing and Painting
John C. Brice, Maryland	James Michael Gentry, Indiana
Political Science	Political Science
John C. Brice, Maryland	Carver Charles Gentry, Florida
Political Science	Latin American Civilization



THE  
UNIVERSITY  
RECORD  
V  
1966-1967



## DEGREES CONFERRED

September 30, 1966

### COLUMBIAN COLLEGE OF ARTS AND SCIENCES

#### BACHELOR OF ARTS

Nellie M. Apanasewicz, District of Columbia Russian	Katharine Boone Crocker, Maryland Sociology
Doris Joe Armijo, New Mexico Political Science	Melissa Ann Cronyn, Virginia Advertising Design
Robert George Beauchamp, District of Columbia Geology	Edith Fry Darlington, District of Columbia Psychology
Walter Bechtold, New York Economics	Myra Tolmach Davis, Virginia Art History and Theory
Diane Susan Beck, New York Psychology	Patricia Ann De Young, Virginia Economics
James Frank Bowling, Jr., District of Columbia Philosophy	Edith Elaine Dinneen, Virginia Psychology
Elizabeth Atlee Brooks, Virginia Drawing and Painting	Sara Colclough Dolan, Maryland English Literature (with distinction)
James Johnstone Brooks, Pennsylvania Political Science	Ellinor O'Neill Duffey, District of Columbia Psychology
Stephen Guthrie Brooks, West Virginia Political Science	John Thomas Durfee, Maryland Political Science
Diane Gail Bruce, District of Columbia Political Science	Gavin Malloy Farr, Maryland History
Kenneth Michael Burke, Virginia Political Science	Rodica Fligler, District of Columbia Psychology
Frances Ann Bussard, Virginia Sociology	Judy Freeman, Maryland American Thought and Civilization
Joyce Jacquelyn Carter, Maryland Sociology	Ann Louise Fuhrman, District of Columbia French Language and Literature
Bruce Ives Chadwick, Connecticut History	Catherine Osann Gekker, Virginia Drawing and Painting
Donna Louise Chapman, Virginia Sociology	James Michael Gentry, Indiana Political Science
Charles Windham Collett, Massachusetts Political Science	Caesar Charles Gonzmart, Florida Latin American Civilization



- Anita Faye Gottlieb, District of  
Columbia  
Sociology
- Toria Hughlett Grasshoff, Virginia  
Sociology
- William Ashley Griffel, Iowa  
Economics
- Julie Louise Guyton, Connecticut  
Political Science
- Gregory George Haller, Virginia  
Economics
- Anita Louise Hansen, District of  
Columbia  
English Literature
- Adrienne Lillian Harkins, Virginia  
American Thought and Civilization
- Thomas Edward Harris, Virginia  
Speech
- Sally Ann Hintz, Virginia  
Art History and Theory
- Marie Lillian Hollywood, District of  
Columbia  
Psychology
- Ju Ryang Hwang, Korea  
Political Science
- Suzanne Margaret Johnson, District of  
Columbia  
Philosophy
- Frances Lillian Jones, New York  
Drawing and Painting
- Susan Ingram Jover, Maryland  
American Thought and Civilization
- Sylvia Diane Kent, District of Columbia  
Psychology
- Jon Robert Kline, District of Columbia  
Drawing and Painting
- Enid Chamberlain Knauth, District of  
Columbia  
Psychology
- Jennifer Ballard Knowles, Maryland  
Drawing and Painting
- Marion Webb Krueger, North Carolina  
Germanic Languages and Literatures
- Holly Jai Lawrence, Texas  
Psychology
- Albin Lothar Lindall, Jr., Virginia  
Geography
- Margo Alison Lion, Maryland  
History
- Evelyn Roberta Manning, Iowa  
Spanish American Literature
- Barbara Manthey, District of Columbia  
Psychology
- Barbara Ann Marr, District of Columbia  
American Thought and Civilization
- Richard Dennis Martin, Virginia  
Political Science
- Dorothy Hart McGhee, Virginia  
History
- Alfred Hugh McKegg, Virginia  
Psychology
- Lisa Smith Mockett, Maryland  
Russian
- Margot De La Mater Ormes, District of  
Columbia  
Spanish Language and Literature  
(with distinction)
- Warren Elliot Palitz, New York  
History
- Cynthia Darché Park, Kansas  
Psychology
- Elizabeth Hopkins Pickens, Virginia  
Sociology
- Katherine Ann Poush, Virginia  
American Thought and Civilization
- Michael Wayne Price, Virginia  
History
- Kyra Timkovsky Priggen, Virginia  
History
- Patricia Huntley Reid, District of  
Columbia  
Art History and Theory
- David Livingstone Rhoad, Pennsylvania  
History
- Claire Louise Rhodes, Texas  
Drawing and Painting
- Judith Alix Richards, New York  
Political Science
- George Eugene Ridler, Virginia  
Chemistry
- Jean Ann Rogers, Virginia  
Spanish Language and Literature
- Helen Jane Rosenblum, New York  
American Thought and Civilization
- Beatriz Ruan, Maryland  
Sociology
- William Barlow Sanders, Jr., Virginia  
History
- Elise Marva Schneider, Pennsylvania  
Psychology
- Priscilla Ann Smith, Pennsylvania  
Dramatic Art
- Madeleine Marie Guyot Soudée, France  
French Language and Literature  
(with distinction)
- Maria Helena Sprehn, Maryland  
Geography
- David Joel Stein, Pennsylvania  
Psychology
- Carlton Ray Sterling, Maryland  
Sociology
- Gardner Mark Stoker, Florida  
Psychology
- Conrad William Strack, New York  
Geography
- Susan Patricia Trump, Wisconsin  
American Thought and Civilization



- Marcy Anne Ubois, Virginia  
 Political Science  
 Wolfgang Richard von Schmertzing,  
 Maryland  
 Geography  
 Elise Newbold Wallace, Pennsylvania  
 American Thought and Civilization  
 Mary Elizabeth Weber, Michigan  
 Sociology  
 George Judson Weeden, Jr., Virginia  
 Economics  
 Carlee Elizabeth Weston, Jr., New Jersey  
 Journalism  
 Emily Avery Whitehorne, District of  
 Columbia  
 Anthropology  
 Katrina Lee Williams, District of  
 Columbia  
 Economics  
 Shirley Elizabeth Williams, Pennsylvania  
 Biology  
 William Crawford Woods, Maryland  
 Philosophy  
 Sidney Clay Wooten, Jr., Maryland  
 Psychology  
 Nguyễn Ylañg, Vietnam  
 American Thought and Civilization

#### BACHELOR OF SCIENCE

- Mayada Ani, District of Columbia  
 Chemistry  
 Simon McGillivray Cargill, District of  
 Columbia  
 Geology  
 Joseph Luther Evans, District of  
 Columbia  
 Physics  
 Kenneth Eugene Jenkins, Maryland  
 Biology  
 Donald John Lofland, Virginia  
 Physics  
 Joseph Edward Modrak, District of  
 Columbia  
 Mathematics  
 Dante James Picciano, Pennsylvania  
 Zoology  
 Suzanne Isabella Spaine, New York  
 Geology  
 Richard Louis Stein, Maryland  
 Chemistry  
 Janusz Bogdan Suszkiw, District of  
 Columbia  
 Chemistry

#### BACHELOR OF SCIENCE IN MEDICAL TECHNOLOGY

- Barbara Bennycastle Babcock, Kentucky  
 Barbara Lou Sills, District of Columbia

#### MASTER OF ARTS

- Warren DeLaplane Ashby, Florida  
 Germanic Languages and Literatures  
 A.B. 1961, The George Washington  
 University  
 Madeline Baker, District of Columbia  
 Political Science  
 A.B. 1963, The George Washington  
 University  
 William Steven Berlin, New York  
 Political Science  
 A.B. 1964, Brooklyn College  
 Sandra Blyveis, Maryland  
 Psychology  
 A.B. 1963, The George Washington  
 University  
 Sandra M. Cavanaugh, District of  
 Columbia  
 Speech Rehabilitation  
 A.B. 1965, The George Washington  
 University  
 Martin Paul Claussen, Jr., Virginia  
 History  
 A.B. 1963, The George Washington  
 University  
 Stanley Lee Cohen, Maryland  
 Psychology  
 A.B. 1963, The George Washington  
 University  
 Joan Thatcher Crook, Pennsylvania  
 French Language and Literature  
 A.B. 1948, The George Washington  
 University  
 Keitha Sapsin Fine, New York  
 Political Science  
 A.B. 1962, Barnard College  
 Jean Marie Gladding, Maryland  
 English Literature  
 A.B. 1964, The George Washington  
 University



- Sven-Ulrich Kurt Grasshoff, Virginia  
Economics  
A.B. 1964, The George Washington University
- Janet Weisblut Gritz, Maryland  
Speech Rehabilitation  
A.B. 1965, The George Washington University
- Susan Halpern, District of Columbia  
French Language and Literature  
A.B. 1957, The George Washington University
- Barbara Hanley Hooper, Virginia  
Political Science  
A.B. 1955, Mount Holyoke College
- Carleen Butler Keating, Maryland  
Art History and Criticism  
A.B. 1963, American University
- Edward Louis Keenan III, Virginia  
Linguistics  
A.B. 1959, Swarthmore College
- Sung Tae Kim, Korea  
Economics  
A.B. 1963, Boston University
- Richard Rogers Kreidler, New Jersey  
History  
A.B. 1965, Washington and Lee University
- Morty Max Lazar, Maryland  
Sociology  
A.B. 1964, The George Washington University
- Ellen Terry McGinn, California  
History  
A.B. 1963, The George Washington University
- Norman Irwin Miller, New York  
Psychology  
B.S. 1963, Tufts University
- Barbara Epstein Morgenstern, Maryland  
Psychology  
A.B. 1962, The George Washington University
- Jean Lewis Parks, California  
Sociology  
A.B. 1940, Ohio Wesleyan University
- Joseph Fabian Schulman, New Jersey  
Economics  
A.B. 1963, Franklin and Marshall College
- Patricia Worth Simmons, Alabama  
Psychology  
A.B. 1964, Emory University
- Alexandra Burroughs Smith, District of Columbia  
Religion  
A.B. 1965, The George Washington University
- James Alexander Snapp, Maryland  
Psychology  
A.B. 1960, American University
- Irvin Lee Steinbach, Maryland  
Psychology  
B.S. 1953, University of Maryland
- H. Terri Velten, Illinois  
Anthropology  
A.B. 1961, Northwestern University
- Jonathan Wilkenfeld, District of Columbia  
Political Science  
B.S. 1964, University of Maryland

#### MASTER OF SCIENCE

- John Thomas Heideman, Ohio  
Psychology  
B.S. 1962, University of Maryland
- Dee Anne Pletsch Houston, Virginia  
Zoology  
B.S. 1965, The George Washington University
- Himanshu Vadilal Kothari, India  
Biochemistry  
B.S. 1959, M.S. 1961, Gujarat University, India
- David Bruce Lomet, Virginia  
Mathematics  
B.S. 1961, Lafayette College
- Paul Dennis Miller, Maryland  
Anatomy  
A.B. 1965, Gettysburg College
- Kenneth Douglas Taylor, Canada  
Mathematics  
A.B. 1964, The George Washington University
- Milton Tenenbaum, District of Columbia  
Chemistry  
B.S. 1951, Syracuse University
- Hedayat Y. Yasaimaibodi, Iran  
Mathematical Statistics  
B.S. 1962, Teheran University, Iran
- B.S. 1966, The George Washington University

#### MASTER OF FINE ARTS

- Marjorie Simons Gates, Maryland  
Painting  
A.B. in Ed. 1962, The George Washington University



## SCHOOL OF MEDICINE

### DOCTOR OF MEDICINE

Cecelia Dolores Gregory, Oregon  
B.S. 1956, M.S. 1962, University of Oregon

## LAW SCHOOL

### BACHELOR OF LAWS

Thomas Alworth, New Jersey  
A.B. 1963, Duke University

James Hayward Bean, Virginia  
A.B. 1962, Brigham Young University

Peter Lewis Berger, Virginia  
B.E.E. 1961, City University of New York

James Oscar Billey, North Dakota  
B.S. in C.E. 1957, University of North Dakota

Barry Blyveis, Maryland  
A.B. 1961, University of Michigan

William Stevens Boesch, Virginia  
A.B. in Govt. 1963, The George Washington University

Gary Mahlon Breneman, Virginia  
A.B. 1960, University of Kansas

John Joseph Brier, Pennsylvania  
B.S. 1963, University of Scranton

Denny Lee Brown, Idaho  
B.S. 1960, Brigham Young University

Max Frederick Brunswick, Connecticut  
A.B. 1963, American International College

George Joseph Collins, District of Columbia  
B.S. 1953, Southern Connecticut State College

Ed.D. 1955, Yale University

Donald George Daus, Virginia  
B.S. in C.E. 1953, University of Illinois

M.S. 1954, Michigan State University

Kenneth Wayne Dobyns, Virginia  
B.E.E. 1961, University of Virginia

Bernard Alfred Donahue, Virginia  
B.S. in C.E. 1955, University of Washington

Jack George Dranttel, Minnesota  
B.S. 1963, U.S. Naval Academy

James Nelson Dresser, Virginia  
B.S. in E.E. 1959, Purdue University

David Bruce Dryden, California  
B.S. 1960, Brigham Young University

Lawrence Andrew Durkin, Pennsylvania  
A.B. 1963, University of Scranton

James Joseph Frank, Maryland  
B.S. 1961, Austin Peay State College

Paul William Freitag, Nevada  
A.B. 1964, University of Nevada

Ralph Everett Harper, Maryland  
A.B. 1956, University of Rochester

David Barge Hart, Virginia  
A.B. 1963, The George Washington University

George Albert Herbster, Virginia  
B.S. in E.E. 1960, Lafayette College

John Malcolm Hollingsworth, Jr., Pennsylvania  
A.B. 1963, University of Pittsburgh

Clifton Lee Holmes, Texas  
A.B. 1961, University of Texas

Thomas Patrick Huber, Maryland  
B.S. 1959, Marquette University

Graham Callahan Huston, Connecticut  
A.B. 1963, Duke University

Mark Whitmore Ingraham, Jr., Maine  
B.S. 1942, University of Maine

David Tsuneaki Ishikawa, Hawaii  
A.B. 1961, San Jose State College

Charles A. Kubinski, District of Columbia  
B.B.A. 1960, St. John's University, New York

Robert Allen Lawrence, Virginia  
B.S. 1962, Columbia University

Darwyn Hall Lesh, Virginia  
A.B. 1963, The George Washington University

Gayle Bertram Matthews, Virginia  
A.B. 1963, The George Washington University

Joseph Willard Maxey, Jr., Oklahoma  
B.B.A. 1963, University of Oklahoma



Hansel L. McGee, New York  
 B.S. 1952, City University of  
 New York  
 M.S. 1960, Polytechnic Institute of  
 Brooklyn  
 Harry Walton McKee, North Dakota  
 Ph.B. 1963, University of  
 North Dakota  
 John F. McNulty, Pennsylvania  
 B.S. in M.E. 1963, Drexel Institute  
 of Technology  
 Irwin Howard Mess, District of  
 Columbia  
 A.B. 1958, Clark University  
 Corinna Lothar Metcalf, District of  
 Columbia  
 A.B. 1952, University of California  
 Martin Alan Meth, Maryland  
 B.E.E. 1963, City University of  
 New York  
 David Russell Murphy, Virginia  
 B.Ch.E. 1957, Rensselaer Polytechnic  
 Institute  
 James Roger Murphy, Maine  
 A.B. 1963, College of the Holy Cross  
 George K. Noguchi, Hawaii  
 A.B. 1961, University of Hawaii  
 George Edwin Norcross, District of  
 Columbia  
 B.S. in F.S. 1961, Georgetown  
 University  
 William George Ohlhausen, Missouri  
 B.S. 1962, St. Louis University  
 John Andrew Prokop, Jr., District of  
 Columbia  
 A.B. 1961, The George Washington  
 University  
 Robert Case Raymond, District of  
 Columbia  
 A.B. 1962, University of Washington

Charles Robert Rhodes, Virginia  
 B.S. in Ind.Engr. 1960, University of  
 North Carolina at Raleigh  
 Vernon R. Rice, Virginia  
 B.S. 1963, Utah State University of  
 Agriculture and Applied Science  
 Keith Von Rockey, Illinois  
 B.S. in Ch.E. 1963, Purdue University  
 Matthew Jay Rosen, New York  
 A.B. 1962, University of Pennsylvania  
 Gordon Howard Rubin, District of  
 Columbia  
 A.B. 1962, University of California  
 at Los Angeles  
 Eugene Joseph Schreiber, Missouri  
 B.S. in C.E. 1959, Purdue University  
 Bruce Irvin Smith, Nebraska  
 A.B. 1963, Nebraska Wesleyan  
 University  
 Jean Grove Taylor, District of Columbia  
 A.B. 1949, Sweet Briar College  
 A.M. 1951, Cornell University  
 Dale Henry Thiel, Virginia  
 B.S.E. 1958, M.S.E. 1960, University  
 of Michigan  
 Don Croft Tingey, Virginia  
 B.S. 1962, University of Utah  
 Oliver Elwyn Todd, Jr., Ohio  
 B.S. (E.E.) 1963, B.S.E. (Math.)  
 1963, University of Michigan  
 Edward William Tupling, Maryland  
 A.B. 1963, The George Washington  
 University  
 Francis Stephen Urbany, Pennsylvania  
 A.B. 1955, Harvard University  
 Monroe M. Wallace, New York  
 A.B. 1963, Lafayette College  
 William Randolph Young, Virginia  
 A.B. 1952, Richmond College

#### GRADUATE SCHOOL OF PUBLIC LAW

##### MASTER OF LAWS

Thomas Merritt Adams, Virginia  
 A.B. 1956, LL.B. 1960, Washington  
 University  
 Frank H. Czajkowski, Maryland  
 A.B. 1957, LL.B. 1959, St. John's  
 University, New York

Robert Upshur Soniat, Louisiana  
 A.B. 1961, LL.B. 1964, Tulane  
 University of Louisiana

##### MASTER OF COMPARATIVE LAW

Narinder Kaur, Virginia  
 A.B. 1955, LL.B. 1957, Lucknow  
 University, India

Mohammad Abdul-Kereim Shaikhli,  
 Virginia  
 A.B. 1950, University of Baghdad,  
 Iraq



## MASTER OF COMPARATIVE LAW (American Practice)

Sung Yoon Cho, Maryland  
LL.B. 1953, Seoul National  
University, Korea  
A.M. 1957, Ph.D. 1963, Tulane  
University of Louisiana

Joseph August Mikus, District of  
Columbia  
J.D. 1934, University of Bratislava,  
Czechoslovakia

## SCHOOL OF ENGINEERING AND APPLIED SCIENCE

### BACHELOR OF ELECTRICAL ENGINEERING

Carl Emmerson Armstrong, Virginia

### BACHELOR OF SCIENCE (Civil Engineering)

Wilbur Lewis Gardner, Sr., Virginia

### BACHELOR OF SCIENCE (Electronics)

Paul David Travesky, Virginia

### BACHELOR OF SCIENCE (Measurement Science)

Don Dow Courtney, Maryland

### BACHELOR OF SCIENCE (Mechanical Engineering)

Thomas Carrano, New York

## MASTER OF ENGINEERING ADMINISTRATION

William Robert Baschnagel, New  
Hampshire  
A.B. 1962, Dartmouth College  
Frank E. Bendrick, Pennsylvania  
B.S. 1955, U.S. Naval Academy  
John T. Lindsay, Ohio  
B.Ch.E. 1951, Ohio State University

David Maxwell Monihan, Arizona  
B.S. 1950, U.S. Military Academy  
Charles Alonzo Schneider, Colorado  
B.S. in C.E. 1957, University of  
Colorado

## MASTER OF SCIENCE IN ENGINEERING

Eliot Dorsey Cohen, Maryland  
B.E.E. 1963, The George Washington  
University



## MASTER OF SCIENCE

Richard Allan Ashwick, Maryland  
A.B. 1963, Hofstra University  
B.S. 1963, Columbia University  
John David Eick, Maryland  
B.S. 1963, University of Michigan

Edward Joel Grant, Maryland  
A.B. 1961, B.S. 1962, Lehigh  
University

## DOCTOR OF SCIENCE

Malcolm Edward O'Hagan, Ireland

Dissertation: *Measurement of the Thermal Conductivity and Electrical Resistivity of Platinum*

B.Eng. (M.E.) 1961, M.Eng. (M.E.) 1962, National University of Ireland

## SCHOOL OF EDUCATION

## BACHELOR OF ARTS IN EDUCATION

Phyllis Olsen Alexander, Virginia  
Social Studies  
Diana Gwendolyn Brown, Maryland  
Elementary Education  
Barbara Joan Gilbert, New York  
Speech  
Charlotte Jeannette Gillies, New York  
Spanish  
Clara Haley Howard, Virginia  
Dance  
Della Alford Jackson, District of  
Columbia  
Special Education  
Stephen Alexander Lapko, New Jersey  
Social Studies  
Phyllis Agnelli Lesansky, Virginia  
Chemistry  
Diane N. McDonald, District of  
Columbia  
Elementary Education  
Bonnie Renert Ross, Virginia  
Elementary Education

Bernetta Ann Ruth, Missouri  
Elementary Education  
Paula Suzanne Seaman, New York  
Elementary Education  
Bernice Wendt Sherwood, District of  
Columbia  
Elementary Education  
Suzanne Riley Sparks, District of  
Columbia  
Elementary Education  
Natalie R. Stein, New Jersey  
English  
Josephine Towler Straub, Virginia  
Elementary Education  
Adrian Moriarty Wall, Virginia  
Social Studies  
Rona Ellen Weinstein, New York  
Elementary Education  
Marjorie Moen Williams, Virginia  
Elementary Education  
Ina Rose Woolman, District of Columbia  
Elementary Education

## BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

Fred F. D'Orazio, Pennsylvania

Joseph W. Mullan, Virginia

## MASTER OF ARTS IN EDUCATION

Vatia Harrison Albright, Oklahoma  
Guidance  
B.S. in Ed. 1942, University of Utah  
Keith Richard Barney, Jr., Virginia  
Guidance  
A.B. 1958, Washington and Lee  
University  
A.M. 1961, University of Virginia

Donald Joseph Begeny, Maryland  
School Administration  
B.S. in Ed. 1958, Pennsylvania State  
College, Clarion  
Sandra Yvonne Belton, West Virginia  
Elementary Education  
A.B. 1960, Howard University



- Diana E. Berselli, New York  
Student Personnel  
A.B. 1965, Wagner College
- Richard Martin Bonieskie, Virginia  
School Administration  
B.S. in P.E. 1959, The George Washington University
- Diana Phyllis Bouchard, New Jersey  
Elementary Education  
A.B. 1963, Upsala College
- Alan Louis Breitler, Maryland  
Philosophy of Education  
A.B. 1960, Florida State University
- Sandra Brotman, District of Columbia  
Adult Education  
A.B. in Ed. 1961, The George Washington University
- George Eddie Bryan, Maryland  
Special Education  
A.B. 1962, Earlham College
- Kenneth Eugene Bumgarner, Virginia  
Physical Education  
B.S. in Health Ed. 1963, Pennsylvania State College, Lock Haven
- Elizabeth Jones Burk, Maryland  
Elementary Education  
A.B. in Ed. 1937, Concord College
- Marsha Ann Burton, District of Columbia  
Secondary Education  
B.S. in P.E. 1959, West Virginia State College
- Betty Jean Carter, Maryland  
Guidance  
A.B. in Ed. 1960, The George Washington University
- Jerome Douglas Catchim, Virginia  
Elementary Education  
A.B. 1957, Abilene Christian College
- Joyce Ruth Chabrow, Pennsylvania  
Special Education  
A.B. 1965, Temple University
- Ivory Lynette Chambers, District of Columbia  
Guidance  
B.S. in P.E. 1952, North Carolina College at Durham
- Patricia Adelaide Cichanowicz, New York  
Secondary Education  
A.B. 1964, Catholic University of America
- Mabel Reid Conway, Maryland  
School Administration  
B.S. 1957, Maryland State College, Bowie
- Robert Lee Conway, Maryland  
School Administration  
B.S. 1959, Maryland State College, Bowie
- Helen W. Cope, District of Columbia  
Reading  
B.S. in Ed. 1941, D.C. Teachers College
- Sara Ann Cross, Maryland  
Reading  
B.S. 1953, Maryland State College, Towson
- James John Decker, Maryland  
Guidance  
B.S. in Ed. 1949, Pennsylvania State College, Mansfield
- Eleanor Louisa Elwell, Minnesota  
Secondary Education  
A.B. 1965, Tufts University
- Jeanne Weber Eyler, Maryland  
Special Education  
B.S. 1941, D.C. Teachers College
- Harriette Sturdivant Freeman, District of Columbia  
Guidance  
B.S. in Ed. 1948, D.C. Teachers College
- Isabell Person Freeman, Georgia  
Elementary Education  
B.S. 1945, Fayetteville State Teachers College
- Charles Jackson Friedlander, Virginia  
Guidance  
A.B. 1953, Washington and Lee University
- Charles C. Gilbert III, Texas  
Student Personnel  
A.B. 1965, The George Washington University
- Jaclyn S. Goldman, Virginia  
Guidance  
A.B. 1962, American University
- Iona Mae Gordon, Virginia  
Elementary Education  
A.B. 1959, Mary Washington College of the University of Virginia
- Richard Winton Grimsley, Maryland  
Physical Education  
B.S. 1965, High Point College
- Andrew Haba, Maryland  
Guidance  
B.S. 1956, Findlay College
- Blanchie Henderson, Texas  
Secondary Education  
A.B. 1961, Baylor University
- Elizabeth Podestá Hickman, Virginia  
Guidance  
Ed.B. 1943, Eastern Illinois University



- Dorothy Ellean Jenkins, District of Columbia  
School Administration  
B.S. 1961, D.C. Teachers College
- Phyllis Skinner Johnson, Maryland  
Guidance  
A.B. 1944, University of Maryland
- Beverly Lenore Kaye, New Jersey  
Student Personnel Work  
A.B. 1965, Trenton State College
- John George Kylus, Maryland  
School Administration  
B.S. in Ed. 1961, Maryland State College, Frostburg
- Elizabeth Alexander Larson, Maryland  
Reading  
A.B. 1931, Wellesley College
- Kenneth Edward Legins, Maryland  
Secondary Education  
A.B. in Ed. 1966, The George Washington University
- Judith L. Leitner, Maryland  
Special Education  
A.B. 1960, Queens College
- Evelyn Roan Marshall, District of Columbia  
Guidance  
B.S. in Ed. 1947, Ohio State University
- Herbert Hoover Matuskey, Maryland  
School Administration  
B.S. 1960, D.C. Teachers College
- Virginia Mary McNeil, Massachusetts  
Student Personnel Work  
A.B. 1965, Emmanuel College
- Suzanne Marie McRae, Wisconsin  
Special Education  
A.B. 1964, Marquette University
- Sigmund Andrew Mierzwa, Jr., Virginia  
School Administration  
B.S. 1959, Clarkson College of Technology
- M.S. 1961, University of Minnesota
- Wilbur Lewis Mundell, Pennsylvania  
Secondary Education  
B.S. in Ed. 1953, Waynesburg College
- Patrick William O'Donnell, Maryland  
Secondary Education  
A.B. 1954, University of Maryland
- Louise Shanley Oiseth, Virginia  
Guidance  
B.S. in Ed. 1940, Boston University
- John Gabriel Oliverio, Virginia  
School Administration  
B.S. in P.E. 1963, West Virginia University
- Lydia Marie Ontko, Maryland  
Guidance  
B.S. in P.E. 1953, Michigan State University
- Diane Marie Pace, Rhode Island  
Student Personnel Work  
Ed.B. 1965, Rhode Island College
- Charles Ernest Ramser, Jr., Virginia  
Physical Education  
B.S. in P.E. 1959, University of Illinois
- John Charles Randall, Jr., Virginia  
Elementary Education  
B.S. in Ed. 1962, Virginia State College
- Barbara Helen Reinwald, District of Columbia  
Physical Education  
B.S. in P.E. 1960, The George Washington University
- Frances Goodman Rohland, Maryland  
Elementary Education  
B.S. 1959, University of Maryland
- Gloria Ann Rothman, Virginia  
Elementary Education  
A.B. 1958, The George Washington University
- Carroll Thomas Ruark, Maryland  
School Administration  
B.S. in Ed. 1962, Maryland State College, Salisbury
- Mary Salley, District of Columbia  
Guidance  
A.B. 1951, Grove City College
- Paul Lee Shackelford, Jr., District of Columbia  
Guidance  
B.S. in P.E. 1956, Howard University
- Julia Ann Shafer, Indiana  
Elementary Education  
B.S. in Ed. 1944, Ball State Teachers College
- Elsie Mann Shaw, District of Columbia  
Guidance  
B.S. 1952, Bluefield State College
- Ida B. Shepley, District of Columbia  
Elementary Education  
Ph.B. 1933, University of Chicago
- Doris Elizabeth Shillingburg, Virginia  
Guidance  
B.S. in Ed. 1961, Madison College
- Clare Frances Shruhan, Massachusetts  
Student Personnel Work  
A.B. 1965, Emmanuel College
- Leonard Alan Smith, Maryland  
Physical Education  
A.B. 1964, Asbury College
- Margaret Ann Stein, Maryland  
Reading  
A.B. in Ed. 1963, The George Washington University
- Beatrice P. Tignor, District of Columbia  
Reading  
B.S. in Ed. 1961, Maryland State College, Bowie



- Audrey S. Trabue, Virginia  
Guidance  
B.S. 1941, Pennsylvania State University
- Geral Elmer Turner, Maryland  
School Administration  
B.S. in Ed. 1952, Maryland State College, Frostburg
- Robert Francis Vaughn, Maryland  
School Administration  
B.S. in P.E. 1961, Western Maryland College
- John Alfred Wagenknecht, California  
Adult Education  
B.S. 1953, Oregon State University
- Roberta Taylor Walker, District of Columbia  
School Administration  
B.S. 1942, D.C. Teachers College
- Judith Wanger, Colorado  
Student Personnel Work  
B.Mus.Ed. 1963, University of Denver
- Arlis Ann Weber, Maryland  
Secondary Education  
B.S. in Ed. 1942, Northern State College
- Joan Coffey Weisskopf, Virginia  
Secondary Education  
B.S. 1953, Southern Connecticut State College
- John Anthony Widitz, Maryland  
Guidance  
B.S. in Health Ed. 1958, Pennsylvania State College, East Stroudsburg
- William Clay Wood, Virginia  
School Administration  
B.S. 1961, Appalachian State Teachers College
- Barbara Joan Zaubert, New Jersey  
Secondary Education  
A.B. 1965, The George Washington University

#### MASTER OF ARTS IN TEACHING

- Judy Frances Arkes, District of Columbia  
Elementary Education  
A.B. 1962, University of Illinois
- Mary Elizabeth Gailliot, Virginia  
Elementary Education  
A.B. 1965, Dunbarton College of Holy Cross

#### EDUCATION SPECIALIST

- Phyllis Lee McDonald, Maryland  
Special Education  
A.B. 1956, A.M. 1964, State University of New York

#### DOCTOR OF EDUCATION

- Edward Franklyn Shrader, Maryland  
Counseling  
Dissertation: *A Study of Students in the Pre-College Summer Session Program, The University of Maryland, 1964-1965*  
A.B. 1940, Randolph-Macon College  
S.T.B. 1943, Westminster Theological Seminary  
A.M. in Ed. 1962, The George Washington University  
A.P.C. (Guidance Practice and Administration) 1963, Hunter College



## SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION

## BACHELOR OF BUSINESS ADMINISTRATION

- |  |   |
|--|---|
| Nabit M. Al-Mirhish, Saudi Arabia<br>Business Administration | Charles Kane Schanker, Virginia<br>Business Administration                |
| Carl Edward Clark, Virginia<br>Accounting                    | James A. Summers, Jr., Maryland<br>Accounting                             |
| Joseph Conroy Finnigan, Virginia<br>Business Administration  | Joseph Michael Thomas, District of<br>Columbia<br>Business Administration |
| Milton Gene Friedman, Florida<br>Accounting                  | Lee Maurice Warren, Maryland<br>Accounting                                |
| George Julius McCallum, Maryland<br>Business Administration  | John David Wills, Pennsylvania<br>Business Administration                 |
| Robert Edward Muschamp, Virginia<br>Business Administration  |   |

## MASTER OF ARTS IN GOVERNMENT

- |  |   |
|--|---|
| James Raymond Brooker, Virginia<br>Public Administration<br>B.S. 1956, Marietta College                      | John Bohumil Langer, Virginia<br>Personnel Administration<br>A.B. 1950, Princeton University              |
| Dailey Jonathan Derr<br>Public Administration<br>A.B. 1964, University of North<br>Carolina                  | Selim Seymour Podnos, Maryland<br>Public Administration<br>B.S. 1937, The George Washington<br>University |
| Alan Lewis Foster, District of Columbia<br>Public Administration<br>Ph.B. 1953, University of Detroit        | Michael Rudd, Virginia<br>Public Administration<br>A.B. 1961, University of Minnesota                     |
| Glenn Leland Hogle, Virginia<br>Personnel Administration<br>B.B.A. 1963, The George Washington<br>University | Louis Alfred Trosch, West Virginia<br>Public Administration<br>A.B. 1961, Bethany College                 |

## MASTER OF BUSINESS ADMINISTRATION

- |   |  |
|---|--|
| Fathy Elsayed Abouzied, District of<br>Columbia<br>Accounting<br>Bachelor of Commerce 1961, Higher<br>Institute of Commerce, U.A.R. | Gerald Royce Cummings, Florida<br>Business Administration<br>B.S. 1954, Washington State University                              |
| Paul Alois Baumann, Washington<br>Business Administration<br>B.Gen.Ed. 1960, Municipal University<br>of Omaha                       | Julian McKinnis Currie, South Carolina<br>Business Administration<br>B.S. 1954, Clemson University                               |
| Charles Rohan Blatchley, Maryland<br>Health Care Administration<br>B.S. 1962, University of Connecticut                             | Sister M. Celesta Day, Wisconsin<br>Health Care Administration<br>B.S. 1964, Viterbo College                                     |
| Gilliat Schroeder Burnham, Connecticut<br>Health Care Administration<br>B.S. in B.A. 1963, Clark University                         | Willard Lee Dix, Nebraska<br>Business Administration<br>B.S. in Ag. Ec. 1953, Iowa State<br>University of Science and Technology |
|   | Russell Walter Fernlund, Jr., Ohio<br>Health Care Administration<br>A.B. 1964, Muskingum College                                 |



- Sister Mary de Sales Flynn, Pennsylvania  
Health Care Administration  
A.B. 1958, Seton Hill College
- Peter Guy Frigeri, Virginia  
Business Administration  
Litt. B. in Journ. 1951, Rutgers,  
the State University
- Joshua Joseph Gedrich, New Jersey  
Business Administration  
B.S. 1963, Rider College
- Hughen Glenn Halliburton, Arkansas  
Business Administration  
B.S. 1953, Arkansas Agriculture and  
Mechanical College
- John F. Hill, Nebraska  
Business Administration  
B.S. 1944, U.S. Naval Academy
- Charles Olaf Hirsch, Texas  
Business Administration  
B.S. 1950, U.S. Naval Academy
- M.S. 1956, Air Force Institute of  
Technology
- Robert Lynn Johnston, Florida  
Business Administration  
B.S. 1955, Union College
- Bernard Aaron Karshmer, Colorado  
Health Care Administration  
B.S. 1963, Columbia University
- James Donald Kenny, Washington  
Business Administration  
B.S.C. 1960, University of Santa Clara
- Robert Clark Kessinger, Florida  
Business Administration  
A.B. 1963, University of Maryland
- Russell Norman Knauss, Pennsylvania  
Business Administration  
B.Gen.Ed. 1963, Municipal University  
of Omaha
- Theodore J. Leonard, New Mexico  
Business Administration  
B.S. 1960, Jacksonville State College
- Stuart M. Diane Moeller, Wisconsin  
Health Care Administration  
B.S. 1962, Viterbo College
- Richard David Montgomery, Ohio  
Personnel Administration  
B.Gen.Ed. 1963, Municipal University  
of Omaha
- William Everett Morley, Delaware  
Business Administration  
A.B. 1964, University of Maryland
- Hugh Vincent Naughton, Illinois  
Business Administration  
A.B. 1958, DePaul University
- Dennis Jay Polen, Virginia  
Business Administration  
B.S. 1963, University of California at  
Los Angeles
- Frederick Arthur Pritchard, California  
Health Care Administration  
B.S. 1963, La Sierra College
- Sydney Mervyn Sinclair, Pennsylvania  
Health Care Administration  
A.B. 1964, Lycoming College
- John Wesley Singleton, District of  
Columbia  
Business Administration  
B.S. in E.E. 1960, West Virginia  
University
- Josh Mitchell Spadachene, Texas  
Business Administration  
B.A.A. 1954, Texas A&M University
- Thomas Wilfred Stedman, New Mexico  
Business Administration  
B.S. 1951, University of New Mexico
- Joseph Anthony Thomas, New Jersey  
Business Administration  
B.S. 1959, University of Maryland
- Jack Brooks Titus, California  
Business Administration  
Mus.B. 1954, Southern Methodist  
University
- Gene Ramon Tyndall, Maryland  
Business Administration  
B.S. 1961, University of Maryland
- John S. Tzoumertis, New Jersey  
Business Administration  
M.D. 1958, University of Heidelberg,  
Germany
- Sc.D. 1961, University of Mainz,  
Germany
- Sylvester Leo Vaeth, Tennessee  
Business Administration  
A.B. 1951, Loyola College
- Rafael Urbino Vargas, New Jersey  
Business Administration  
B.S. 1959, Seton Hall University
- Carlos Manuel Villar, Virginia  
Business Administration  
Doctor of Economics 1960, La Plata  
National University, Argentina
- Ronald Edward Vioni, Connecticut  
Business Administration  
A.B. 1964, University of Virginia
- John Edward Watters, District of  
Columbia  
Business Administration  
B.S. 1933, U.S. Military Academy
- Richard Charles Westhofen, Ohio  
Health Care Administration  
B.S. 1958, University of Wisconsin
- James Augustus Williams, Mississippi  
Business Administration  
B.S. 1954, University of Southern  
Mississippi



Mary Jane Young, California  
Health Care Administration  
B.S. in Nursing 1955, San Diego  
College for Women  
Wesley Dean Young, California  
Health Care Administration  
B.S. 1963, San Jose State College

Arnold Gerard Ziegler, California  
Business Administration  
B.B.A. 1966, The George Washington  
University

### SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS

#### BACHELOR OF ARTS

Lucia Ann Berger, Connecticut  
International Affairs  
Karen Elizabeth Bond, Illinois  
International Affairs  
Roderic Ai Camp, California  
International Affairs  
John Evarts Horner, Washington  
International Affairs  
Patricia Eileen Jerome, New Jersey  
International Affairs  
Alan Barry Levine, Connecticut  
Public Affairs  
Sandrene Lippucci, Virginia  
International Affairs  
Eric Bruce Marcy, Virginia  
International Affairs

V. Miro Morville, District of Columbia  
International Affairs  
(with distinction)  
Myra Norton, Georgia  
International Affairs  
Martha Perlowych, New Jersey  
International Affairs  
Michael James Roche, Ohio  
International Affairs  
Jon Clinton Sherwood, Connecticut  
International Affairs  
Frank Everett Stolper, New Jersey  
International Affairs  
Ronald Shields Walt, Colorado  
International Affairs

#### MASTER OF ARTS

Jesse Allen Bradford, Jr., Alabama  
International Affairs  
B.J. 1959, University of Missouri  
Howard Lloyd Campbell, Hawaii  
International Affairs  
A.B. 1964, University of the Pacific  
A.B. 1951, Furman University  
Jon Dennis Cozean, District of Columbia  
International Affairs  
B.J. 1960, University of Missouri  
George Thomas Desorcy, Massachusetts  
International Affairs  
A.B. in Govt. 1962, The George  
Washington University  
Thomas Selby Dunmire, California  
International Affairs  
B.S. 1952, U.S. Military Academy  
Lennard David Gerson, Virginia  
International Affairs  
A.B. in Govt. 1964, The George  
Washington University  
James Allen Kuhlman, Illinois  
International Affairs  
B.S. 1963, Northwestern University

William Lester Lee, Virginia  
International Affairs  
A.B. 1960, Stanford University  
Rosemary Elaine Pascucci, Connecticut  
International Affairs  
A.B. 1965, Tufts University  
Don Edwin Schmelzer, Virginia  
International Affairs  
A.B. 1963, University of Redlands  
Donato Amedeo Strammello, Jr.,  
Connecticut  
International Affairs  
A.B. 1964, Trinity College  
Chin Ha Suk, Korea  
International Affairs  
A.B. in Govt. 1962, The George  
Washington University  
Jan Herre van der Veen, District of  
Columbia  
International Affairs  
A.B. 1961, Haverford College



## COLLEGE OF GENERAL STUDIES

## ASSOCIATE IN ARTS

- |   |  |
|---|--|
| Alvin Eugene Causey, New York           | Josephine Emilie Mayer, District of Columbia |
| Floyd I. Clarke, Virginia               | Norman Joseph Rienks, Wisconsin              |
| Accounting                              | Virginia M. Stewart, Maryland                |
| Clyde Cecil Kerce, District of Columbia |  |
| Loran C. Lindsey, Maryland              |  |
| Accounting                              |  |

## BACHELOR OF ARTS

- |   |  |
|---|--|
| Sverre Odd Bach, Florida                | Robert-Alton Johnson, Maryland           |
| Social Sciences                         | Social Sciences                          |
| William Thomas Ballard, Missouri        | Keith Charles Kuester, Wisconsin         |
| Social Sciences                         | Social Sciences                          |
| Joseph James Bischoff, New Jersey       | Ella Ruth Lawson, District of Columbia   |
| Social Sciences                         | Social Sciences                          |
| Alexander G. Bobrovsky, Virginia        | Leroy Alvin Madera, California           |
| Social Sciences                         | Social Sciences                          |
| Claude M. Briggs III, Pennsylvania      | Daniel Joseph Morgiewicz, New York       |
| Social Sciences                         | Social Sciences                          |
| Glenn Anthony Carus, Michigan           | Stanley Charles Peake, California        |
| Social Sciences                         | Social Sciences                          |
| Gerald George Comfort, New York         | Charles Benjamin Salsgiver, Pennsylvania |
| Social Sciences                         | Social Sciences (with distinction)       |
| Modestino Rocco De Feo, Connecticut     | Charles Gloyd Shettle, Florida           |
| Social Sciences                         | Social Sciences                          |
| John Robert Dewenter, Jr., Pennsylvania | Warren Andrew Skon, Minnesota            |
| Social Sciences                         | Social Sciences                          |
| Julia Malpassé Evans, Virginia          | Allen Wayne Slifer, Illinois             |
| Social Sciences                         | Social Sciences                          |
| Paul Martin Gallagher, Virginia         | Richard Neil Snodgrass, Ohio             |
| Social Sciences                         | Social Sciences                          |
| William Evan Gildow, Oregon             | Daniel Harding Stinemates, California    |
| Social Sciences                         | Social Sciences                          |
| William Paul Haubner, Virginia          | William Thompson, Illinois               |
| Social Sciences                         | Social Sciences                          |
| William Louie Hudspeth, Texas           | Benjamin Watson Van Wagner, Ohio         |
| Social Sciences                         | Social Sciences                          |
| John Gilbert Johnson, Virginia          | Pierre Herbert Vining, New York          |
| Social Sciences                         | Social Sciences                          |

## BACHELOR OF BUSINESS ADMINISTRATION

- |                           |                                    |
|---------------------------|------------------------------------|
| James W. Atwell, Virginia | Harold Dow Waggoner, Jr., Virginia |
|---------------------------|------------------------------------|

## MASTER OF ARTS

- |   |  |
|---|--|
| Rowland Groves Baughman, Maryland           | Theodore Peter Ferrato, Florida        |
| Personnel Administration                    | Personnel Administration               |
| A.B. 1957, Western Maryland College         | B.S. 1956, Ohio State University       |
| Donald Webb Connelly, Georgia               | Walter Nelson Hodges, Virginia         |
| Personnel Administration                    | Personnel Administration               |
| A.B. 1963, The George Washington University | A.B. 1956, College of William and Mary |
| John Wayne Ebrite, Jr., Maryland            |  |
| Personnel Administration                    |  |
| B.S. 1962, University of Maryland           |  |



## MASTER OF ARTS IN INTERNATIONAL AFFAIRS

James Orrin Appleyard, Virginia  
 B.S.E. 1940, University of Michigan  
 James Lester Ballard, Jr., Virginia  
 B.S. 1939, Davidson College  
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 B.S. 1945, U.S. Naval Academy  
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 B.S. 1958, University of Maine  
 M.S. 1960, Air Force Institute of  
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 B.S. 1939, U.S. Military Academy

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 B.S. 1939, Colorado State University  
 Raymond Gregory Leddy, Pennsylvania  
 A.B. 1933, College of the Holy Cross  
 LL.B. 1936, Fordham University  
 Ted Rudolph McGinnis, Pennsylvania  
 A.B. 1959, University of Missouri  
 Evans Jones Robinson, Virginia  
 B.S. 1941, Maryland State College,  
 Towson

## MASTER OF BUSINESS ADMINISTRATION

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 B.S. 1939, U.S. Military Academy

## MASTER OF SCIENCE IN BUSINESS ADMINISTRATION

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 B.S. in C.E. 1956, University of  
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 A.B. 1955, Duke University  
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 B.S. 1953, University of Oregon  
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 B.S. 1951, Air Force Institute of  
 Technology  
 Ragnar Lambert Arnesen, Michigan  
 A.B. 1947, Cornell University  
 Gerson Lucas Arnett, Georgia  
 B.S. 1963, Georgia Institute of  
 Technology  
 Charles Jewell Baker, Virginia  
 A.B. in Govt. 1948, The George  
 Washington University  
 Eugene Arnold Glen Beaumont,  
 California  
 A.B. 1951, Westmont College  
 George Combs Berger, Texas  
 B.S. 1945, U.S. Military Academy  
 Jerry George Berkowitz, California  
 B.Gen. Ed. 1963, Municipal University  
 of Omaha  
 Richard Donald Besley, Florida  
 A.B. 1953, University of Texas  
 Schuyler Bissell, Mississippi  
 A.B. 1952, Mississippi Southern  
 University  
 Emil Nathaniel Block, Jr., Ohio  
 B.S. 1956, U.S. Naval Academy  
 M.S.E. (Instrumentation), M.S.E.  
 (Aero) 1961, University of Michigan

Max Galen Bodenhausen, Missouri  
 B.S. 1953, University of Missouri  
 Dale Lee Brakebill, Texas  
 B.S. in Comm. 1955, Texas Christian  
 University  
 James McNeil Brower, California  
 B.S. 1947, University of California  
 LL.B. 1950, Hastings College of Law,  
 University of California  
 Gerald Chadwick Brown, New York  
 B.S. 1955, U.S. Military Academy  
 Ronald Edwin Bryan, Ohio  
 B.S. in B.A. 1952, University of Akron  
 Lucius Garland Bryant, Jr., Florida  
 B.E.E. 1952, Georgia Institute of  
 Technology  
 Robert Eugene Buhrow, Texas  
 A.B. 1958, University of Texas  
 Benjamin Franklin Burgess, Arkansas  
 A.B. 1964, Washburn University of  
 Topeka  
 Lochlin Willis Caffey, Maryland  
 B.S. in C.E. 1942, Georgia Institute  
 of Technology  
 B.S. 1945, U.S. Military Academy  
 Robert Alexander Carter, South Carolina  
 B.S. in Comm. 1950, The Citadel  
 Ronald Edward Catton, Nebraska  
 B.Gen.Ed. 1962, Municipal University  
 of Omaha  
 James David Chatfield, Ohio  
 B.S. 1946, U.S. Military Academy  
 Graduate 1951, Air Force Institute of  
 Technology



- Thomas English Chilcott, Illinois  
B.S. 1956, LL.B. 1959, University of Illinois
- Orville Wesley Clancy, South Dakota  
B.Gen.Ed. 1963, Municipal University of Omaha
- Harry Nation Cordes, Florida  
B.Gen.Ed. 1963, Municipal University of Omaha
- Richard Allen Cordill, Indiana  
B.S. in M.E. 1963, Rose Polytechnic Institute
- William Jackson Crooke, Florida  
B.S. 1953, Michigan State University
- Jack C. Cummings, Washington  
B.B.A. 1954, University of Washington
- Douglas Lee Curtis, Oklahoma  
B.B.A. 1963, University of Oklahoma
- Robert Charles Daly, California  
B.S. 1944, U.S. Military Academy
- M.S. in M.E. 1961, University of Southern California
- Robert William Daniels, Texas  
B.S. in C.E. 1950, University of Texas
- Edwin George Dankworth, Virginia  
B.S. 1942, U.S. Naval Academy
- B.S. in A.E. 1950, U.S. Naval Postgraduate School
- Aero.Engr. 1951, California Institute of Technology
- Melvin Thomas Deschamp, Louisiana  
B.S. 1950, Louisiana State University
- William Joseph Dichtel, Maryland  
A.B. 1942, Reed College
- Benjamin Rudolph Eggeman, Jr., Ohio  
B.S. 1941, Yale University
- Joseph Harmon Eibling, Ohio  
C.E. 1955, University of Cincinnati
- Frank Joseph Emma, California  
B.S. 1955, Loyola University of Los Angeles
- Olando Carl Epp, Kansas  
A.B. 1947, University of Kansas
- Donald Lee Ernst, Oklahoma  
B.S. 1956, U.S. Military Academy
- John Willard Ervin, New Jersey  
B.S. in C.E. 1942, Rutgers, the State University
- B.S. in Aero. Engr. 1959, University of Michigan
- Samuel Henry Fields, Virginia  
A.B. 1954, U.S. Military Academy
- Frederic J. Flemings, Jr., Connecticut  
B.S. in C.E. 1956, Virginia Military Institute
- Robert Eugene Ford, Mississippi  
B.S. 1960, Mississippi State University
- David Waller Forgan, Florida  
B.S. 1955, University of Colorado
- Vernon Lee Frye, Minnesota  
B.S. 1955, University of Minnesota
- Clyde Hoover Garner, Florida  
B.S. in Comm. 1950, University of North Carolina
- Felix Roby Garrett, Louisiana  
B.S. 1943, Louisiana State University  
M.E. in C.E. 1959, Texas A&M University
- Ephraim Mayper Gershater, Florida  
A.B. 1948, A.M., B.S. 1949, University of Nebraska
- B.S. 1954, University of Maryland
- James Ernest Gillis, Jr., Virginia  
B.S. 1941, Catholic University of America
- Fred K. Gordon, Jr., Georgia  
B.S. in Textile Engr. 1952, Auburn University
- James Fletcher Gunby, Jr., Washington  
B.S. in Agr. 1954, University of Idaho
- Boyd Edgar Gustafson, Minnesota  
B.S. 1943, U.S. Naval Academy
- B.S. in E.E. 1950, U.S. Naval Postgraduate School
- M.S. in M.E. 1951, Massachusetts Institute of Technology
- Richard George Haag, Illinois  
B.Gen.Ed. 1963, Municipal University of Omaha
- John Arthur Haaren, Nebraska  
B.S. 1952, U.S. Naval Academy
- Thomas O'Regan Haig, Michigan  
B.S. 1955, University of Illinois
- James William Hall, Pennsylvania  
B.S. in M.E. 1956, University of Arizona
- B.S. 1957, Pennsylvania State University
- Irby Joseph Hardy, Louisiana  
B.S. in B.A. 1954, University of Southwestern Louisiana
- Torr Wagner Harmer, Jr., Massachusetts  
A.B. 1950, Princeton University
- LeRoy John Haugh, Virginia  
A.B. 1949, College of St. Thomas
- LL.B. 1957, Georgetown University
- Roderick James Hegarty, Pennsylvania  
B.S. 1953, U.S. Naval Academy
- Robert Arthur Heidrich, Washington  
B.S. in M.E. 1954, University of Massachusetts
- George Fred Heinrich, Michigan  
B.S. 1954, U.S. Naval Academy
- M.S. in Nuclear Engr. 1961, Air Force Institute of Technology
- Alton Laverne Hilton, Louisiana  
B.S. 1958, Northern Arizona University



- Frank Anton Hinrichs, Oklahoma  
B.S. 1941, Oklahoma State University  
of Agriculture and Applied Science
- Kenneth Leroy Holden, California  
B.S. 1955, U.S. Naval Academy
- Grant Wendell Hollis, Jr., Indiana  
B.S. 1955, Evansville College
- Charles Edward Hopkins, Georgia  
A.B. 1958, Mercer University
- Harlan Baker Hume, California  
B.S. 1961, Indiana University
- James Vernon Hyland, Idaho  
B.S. 1952, University of Idaho
- Richard Graham Immig, New Jersey  
A.B. 1964, Southern Colorado State  
College
- Paul Patrick Jacko, California  
A.B. 1964, San Francisco State College
- Tom W. Jackson, Louisiana  
B.B.A. 1956, Tulane University of  
Louisiana
- Ralph H. Jacobson, Utah  
B.S. 1956, U.S. Naval Academy  
M.S. 1962, Air Force Institute of  
Technology
- Jerry McLynn Johnson, North Carolina  
B.S. 1965, Florida State University
- Lawrence Henry Johnson, Utah  
B.S. 1953, Florida Southern College
- Richard Harold Johnson, Texas  
B.S. 1945, U.S. Military Academy
- Frederic Gene Jones, South Carolina  
B.S. in Comm. 1955, The Citadel
- Orie Orlean Jones, Jr., Texas  
A.B. 1965, Chapman College
- Robert Henry Jones, Texas  
B.B.A. 1963, University of Oklahoma
- Royce Urell Jorgensen, Nevada  
B.S. in Mil.Sci. 1965, Municipal  
University of Omaha
- Sherman Katz, New York  
B.S. 1966, Hampton Institute
- Robert Haynes Kelley, Kentucky  
A.B. 1951, Centre College of Kentucky
- Charles Arnold Kelly, Indiana  
B.S. 1955, Indiana University
- Melbourne Kimsey, Georgia  
B.S. in Agri. 1953, University of  
Georgia
- Adam Joseph Klein, Tennessee  
LL.B. 1951, University of Tennessee
- Vernon George Knourek, Illinois  
B.S. 1950, Millikin University
- Robert William Kunstel, Missouri  
B.S. 1950, University of Missouri
- William Earl Lawson III, New Jersey  
B.Gen.Ed. 1964, Municipal University  
of Omaha
- Raymond Osborn Lewis, Ohio  
B.S. 1945, Marquette University
- Charles Robert Linton, Florida  
B.S. 1954, U.S. Military Academy  
M.S. in E.E. 1961, Stanford University
- Garette E. Lockee, South Carolina  
B.S. 1943, University of South  
Carolina
- Loren Lloyd Lorenzen, Iowa  
A.B. 1952, University of Iowa
- Kenneth Edward Luckey, Pennsylvania  
B.S. 1954, U.S. Military Academy  
M.S. 1962, University of Washington
- Donald Dale Luenenberg, Nebraska  
B.S. in B.A. 1954, Municipal  
University of Omaha
- David Reed Lyon, Utah  
A.B. 1941, University of Utah
- William John Mall, Pennsylvania  
B.B.A. 1954, University of Pittsburgh
- Charles Harry Martin, Rhode Island  
B.S. in B.A. 1952, Bryant College
- Gordon Patrick Masterson, Michigan  
B.S. in Ed. 1956, University of Detroit
- Jimmy Lewis Maturo, North Carolina  
B.S. 1956, University of Kentucky
- William Dean McAllister, Oregon  
A.B. 1954, San Diego State College
- James Norman McClelland, Louisiana  
B.S. 1951, Centenary College  
B.S. 1961, Air Force Institute of  
Technology
- William Wallace McCormick, Texas  
B.B.A. 1955, Baylor University
- James Lawrence McKenna, Virginia  
B.S. 1963, M.S. 1965, Oklahoma State  
University of Agriculture and Applied  
Science
- Ivan Gene Mieth, Texas  
B.S. 1955, Texas A&M University
- Richard Lawrence Milne, Iowa  
B.M.E. 1950, Rensselaer Polytechnic  
Institute
- Michael William Moore, Iowa  
B.S. in Comm. 1956, University of  
Iowa
- Jackie Elvin Moothart, Washington  
B.Gen.Ed. 1963, Municipal University  
of Omaha
- Lurie Jefferson Morris, Florida  
B.S. 1951, Auburn University
- Richard Thomas Mulcahy, Rhode Island  
B.S. 1952, U.S. Naval Academy  
B.S. in Petr.Engr. 1959, University of  
Texas
- William D. Neal, Jr., Mississippi  
B.S. 1952, Mississippi State University



- Eugene Owens, New York  
A.B. 1959, University of Arizona  
M.S. 1962, Purdue University  
Herbert Wesley Pangle, Texas  
B.S. in Bus. 1963, Indiana University  
Frank Raymond Parsons, Jr., Maryland  
B.S. 1950, University of Maryland  
Jack Vernon Pearce, Ohio  
B.S. 1947, U.S. Military Academy  
M.S. 1952, University of Illinois  
Bryan Severance Pickett, Arkansas  
B.S. 1942, U.S. Naval Academy  
B.C.E. 1947, M.C.E. 1948, Rensselaer  
Polytechnic Institute  
Nelson Otto Pohl, Virginia  
A.B. 1952, Sacramento State College  
Paul Raymond Poulin, Vermont  
Ed.B. 1941, University of Vermont  
A.M. 1947, Columbia University  
Prentis Robert Ray, Texas  
A.B. 1965, University of Maryland  
Benjamin Smith Read, Virginia  
A.B. 1942, College of William and  
Mary  
Charles C. Rhymes, Jr., Texas  
B.B.A. 1949, Southwest Texas State  
College  
Richard Henry Riel, Maryland  
B.S. 1950, University of Rhode Island  
M.S. 1952, Virginia Polytechnic  
Institute  
Charles McCoy Rierison, Jr., North  
Carolina  
B.S. in Comm. 1955, The Citadel  
Royal Raymond Ross, New York  
B.S. 1946, College of the Holy Cross  
James Leslie Russell, Washington  
B.S. in E.E. 1955, University of  
Washington  
Samuel Oscar Sadler, Texas  
B.S. in B.A. 1954, Wichita State  
University  
Donald Jack Scheid, California  
A.B. 1955, Fresno State College  
David Elgas Scherrer, Ohio  
B.B.A. 1958, University of Mississippi  
Robert Henry Schmidt, Oklahoma  
B.Gen.Ed. 1962, Municipal University  
of Omaha  
Walter Clair Schrupp, South Dakota  
B.S. 1954, U.S. Military Academy  
M.S. 1963, University of Nebraska  
Richard Louis Seidel, Ohio  
B.M.E. 1948, Cornell University  
Norman Edward Shaw, Massachusetts  
B.Gen.Ed. 1964, Municipal University  
of Omaha  
Robert Francis Shields, Michigan  
B.S. 1960, University of Maryland  
Kenneth E. Shiflet, Virginia  
A.B. 1957, Indiana University  
Curtis Lockard Shufflebarger, Jr.,  
Virginia  
B.S. in C.E. 1950, Virginia Military  
Institute  
Carl Richard Smith, Pennsylvania  
B.S. 1955, Franklin and Marshall  
College  
Marcial Sorrel III, Texas  
A.B. 1964, Municipal University of  
Omaha  
Casper Truman Spangrud, Arizona  
A.B. 1956, University of Arizona  
Daren Lane Spessert, Ohio  
A.B. 1950, West Virginia University  
Robert Bruce Strain, Indiana  
A.B. 1965, Southwestern State College  
Edward Clayton Straub, Ohio  
B.S. 1955, U.S. Naval Academy  
M.S. in E.E. 1961, University of  
Illinois  
Howard E. Stripling, Florida  
B.S. in B.A. 1959, Ohio State  
University  
Joseph John Strnad, Nebraska  
A.B. 1963, The George Washington  
University  
Robert Arnold Sweatt, New Hampshire  
A.B. 1940, University of New  
Hampshire  
James Stuart Thompson, New York  
B.S. 1959, Florida State University  
Donald Orville Todd, Tennessee  
B.S. 1954, Memphis State University  
Myron Bennett Trout, Indiana  
B.S. in Bus. 1955, Indiana University  
John William Vessey, Jr., Minnesota  
B.S. 1963, University of Maryland  
Richard Dale Vogel, Ohio  
A.B. 1953, Capital University  
Marvin Dale Volkert, Virginia  
B.S. in Mil.Sci. 1952, University of  
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George Lamort Von Tersch, Iowa  
B.S. in E.E. 1953, Iowa State  
University of Science and Technology  
M.S. in E.E. 1963, Air Force Institute  
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Thaddeus Baynard Welch, Jr., Florida  
B.S. 1954, The Citadel  
M.S. 1963, University of Oklahoma  
Robert Lewis Wetzel, West Virginia  
B.S. 1952, U.S. Military Academy  
Robert Michael White, Pennsylvania  
B.E.E. 1951, New York University  
Alfred Hannibal Wiemann, Kentucky  
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 B.S. 1951, Iowa State University of  
 Science and Technology  
 Thomas Paul Williams, Ohio  
 B.S. 1958, University of Maryland  
 Burke Lester Wilson, Maryland  
 B.S. 1955, University of Maryland  
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 B.S. 1941, U.S. Naval Academy  
 Charles Bryan Woford, Virginia  
 B.Gen.Ed. 1962, Municipal University  
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#### MASTER OF SCIENCE IN FINANCIAL MANAGEMENT

George Rufus Bryan, Texas  
 B.S. 1959, University of Maryland  
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 B.S. 1937, U.S. Naval Academy  
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 B.S. 1962, M.S. 1963, College of the  
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 B.S. 1958, Xavier University

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 A.B. 1961, Beloit College  
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 A.B. 1961, University of Cincinnati  
 Edward Charles Weckel, New York  
 B.S. 1958, U.S. Military Academy  
 B.S. 1964, U.S. Naval Postgraduate  
 School  
 Robert Lanon White, Texas  
 B.S. 1964, U.S. Naval Postgraduate  
 School  
 Thomas John Willenborg, Virginia  
 B.S. 1964, Creighton University

#### MASTER OF SCIENCE IN GOVERNMENTAL ADMINISTRATION

Matthew Patrick Caulfield, New York  
 B.S. 1958, Fordham University  
 Stephen Stafford Mann, Jr., Virginia  
 B.S. 1938, U.S. Naval Academy

Jerard Lee Weikert, Ohio  
 A.B. 1960, Wittenberg College

#### MASTER OF SCIENCE IN INTERNATIONAL AFFAIRS

Ronald Trevor Adams, Jr., Georgia  
 B.S. 1946, U.S. Military Academy  
 Walter Edwin Adams, Virginia  
 B.S. 1950, U.S. Military Academy  
 Leland Guy Alexander, Kansas  
 B.S. 1962, University of Maryland  
 Carl Andrew Anderson, Connecticut  
 B.S. 1948, U.S. Military Academy  
 M.S.E. 1955, Ph.D. 1958, University  
 of Michigan  
 Angel James Angel, Virginia  
 B.Gen.Ed. 1964, Municipal University  
 of Omaha  
 Arthur W. Augustine, Jr., Arkansas  
 B.S. 1957, Syracuse University  
 Harold R. Austin, Texas  
 B.Gen.Ed. 1963, Municipal University  
 of Omaha

Jay Gainer Bachman, Utah  
 B.S. 1948, University of Utah  
 Garry A. Bahrich, Ohio  
 A.B. 1965, Ohio State University  
 Richard Balfe Baird, Ohio  
 B.S. 1949, Purdue University  
 James Halford Barry, California  
 B.S. 1946, U.S. Naval Academy  
 M.S. 1958, U.S. Naval Postgraduate  
 School  
 John Copeland Bartholf, New York  
 B.S. 1946, U.S. Military Academy  
 John Phillip Bayne, Connecticut  
 B.S. 1954, U.S. Naval Academy  
 William Beck, Jr., California  
 A.B. 1947, Harvard University  
 A.M. 1964, The George Washington  
 University



- Paul Edward Bell, Florida  
B.Gen.Ed. 1965, Municipal University of Omaha
- George Charles Benson, Pennsylvania  
B.S. 1945, U.S. Military Academy
- Robert Brewster Bergner, Pennsylvania  
A.B. 1956, American University
- Frederick Corbin Blesse, District of Columbia  
B.S. 1945, U.S. Military Academy
- William Armistead Boardman, Tennessee  
A.B. 1943, University of the South  
B.D. 1945, Union Theological Seminary
- Mark Mayo Boatner III, Louisiana  
B.S. 1943, U.S. Military Academy
- Louis Charles Bosetti, Maryland  
B.S. 1941, University of Pennsylvania
- Marion Lillard Boswell, Missouri  
A.B. 1946, William Jewell College
- Richard Allan Bowen, Nebraska  
B.Gen.Ed. 1964, Municipal University of Omaha
- David Denison Bradburn, California  
B.S. 1946, U.S. Military Academy  
M.S.E. 1952, Purdue University
- Robert Elgin Brant, Virginia  
B.S. 1961, University of Maryland
- Ernest Paul Braucher, Illinois  
B.S. 1945, U.S. Military Academy  
M.S. in C.E. 1950, Massachusetts Institute of Technology
- Herbert Owen Brennan, Nebraska  
B.S. 1947, U.S. Military Academy
- John Roy Brock, Virginia  
A.B. 1942, L.L.B. 1948, The George Washington University
- Peter Gregory Brown, Rhode Island  
A.B. 1951, Tufts University
- Royal Baxter Brown, Arkansas  
B.S. 1963, University of Maryland
- Russell Edward Brown, Virginia  
B.S. 1965, University of Maryland
- Kenneth Rogers Bull, South Carolina  
B.S. in B.A. 1949, University of South Carolina
- Daniel Lee Burkett, California  
B.Gen.Ed. 1965, Municipal University of Omaha
- Harry Archer Buzzett, Florida  
B.S. 1944, U.S. Military Academy  
M.S. in E.E. 1959, Georgia Institute of Technology
- William Joseph Cain, Jr., Virginia  
B.S. 1937, U.S. Military Academy
- Carl James Campbell, Pennsylvania  
B.Gen.Ed. 1963, Municipal University of Omaha
- David Leon Cantor, Maryland  
B.S. 1958, Florida State University
- Marco Joseph Caraccia, North Carolina  
B.S. 1948, Cornell University  
M.S. in Ag. Ec. 1949, Pennsylvania State University
- Charles Harrison Carr, Pennsylvania  
B.S. 1941, U.S. Naval Academy
- James Francis Casey, Michigan  
B.S. 1950, University of Colorado
- Nicholas Horace Chavasse, District of Columbia  
B.S. 1938, U.S. Military Academy
- William Gerald Christensen, Washington  
B.B.A. 1956, Baylor University
- Robert Eugene Clark, Florida  
B.S. in B.A. 1955, University of Florida
- Carter Weldon Clarke, Jr., Florida  
B.S. 1948, U.S. Military Academy
- John Robin Davis Cleland, Virginia  
B.Gen.Ed. 1962, Municipal University of Omaha
- John Hiley Cobb, Kentucky  
B.S. 1943, U.S. Military Academy
- William Smith Coleman, South Carolina  
B.S. 1939, Clemson University
- Thomas Watts Collier, North Carolina  
B.S. 1952, U.S. Military Academy
- Cecil Allen Commander, Georgia  
B.S. 1940, Mississippi State College
- Wilbur Lyman Creech, Nevada  
B.S. 1960, University of Maryland
- James Sutherland Creedon, Connecticut  
B.S. 1953, University of Connecticut
- Dale Jackson Crittenberger, Indiana  
B.S. 1950, U.S. Military Academy
- Leonard Andrew Crosby, Mississippi  
B.Gen.Ed. 1962, Municipal University of Omaha
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B.S. 1945, U.S. Military Academy
- Alfred John D'Arezzo, Virginia  
B.S. 1938, U.S. Military Academy  
M.E. in C.E. 1950, Texas A&M University
- Hector Wood Davis, Jr., Texas  
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B.S. 1946, U.S. Military Academy
- William Garvin Devanny, New Jersey  
A.B. 1949, Brown University  
B.D. 1952, Princeton Theological Seminary
- Robert Edward Dingeman, Florida  
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B.S. 1954, University of South Carolina
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B.S. 1955, Ohio State University
- Philip Carney Donovan, New York  
B.S. 1954, U.S. Naval Academy
- Thomas Davison Drake II, California  
B.S. 1945, U.S. Military Academy
- Walter M. Drozd, Pennsylvania  
B.S. 1940, LL.B. 1947, University of Pennsylvania
- Gordon James Duquemin, Nebraska  
B.S. 1947, U.S. Military Academy
- Robert Eugene Duvall, California  
B.S. 1945, U.S. Military Academy  
A.M. 1956, Trinity University  
Ed.D. 1964, University of Denver
- John David Eaton, Connecticut  
B.S. 1944, U.S. Naval Academy  
J.D. 1953, The George Washington University
- George Lawrence Eckert, Virginia  
B.S. 1942, U.S. Military Academy
- James Sidle Elfelt, Pennsylvania  
B.B.A. 1951, University of Minnesota  
A.M. 1959, Stanford University
- Hermann Joseph Estelmann, Michigan  
B.S. 1946, U.S. Naval Academy
- Jack Richard Evans, California  
B.S. 1961, University of Maryland
- Richard Edgar Evers, Florida  
B.S. in Mil.Sc. 1959, University of Maryland
- George Bernard Fink, California  
B.S. 1946, U.S. Military Academy  
M.S. 1953, California Institute of Technology
- David Frederick First, New Jersey  
A.B. 1952, Sacramento State College
- Herbert George Fischer, New Hampshire  
A.B. 1949, University of Minnesota
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B.S. 1942, Oklahoma State University of Agriculture and Applied Science
- Ralph Wilcutt Frame, Jr., California  
B.S. 1943, U.S. Naval Academy
- Robert Willoughby Garrett, Maryland  
B.S. 1941, U.S. Military Academy
- Robert Louis Gennette, Kansas  
A.B. 1960, Marquette University
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B.S. 1962, University of Maryland
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B.S. 1941, U.S. Naval Academy
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B.S. 1951, Centenary College
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B.Gen.Ed. 1963, Municipal University of Omaha
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B.S. 1958, University of Colorado
- John Thompson Guice, Arizona  
B.S. 1947, U.S. Military Academy
- James Rutland Gunn, Jr., Florida  
B.S. 1936, U.S. Military Academy
- Charles Zartman Hanus, Ohio  
A.B. 1948, Ohio State University
- Strother Banks Hardwick, Florida  
B.S. 1939, U.S. Military Academy
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B.S. 1965, University of Maryland
- Robert Fleming Hatch, Texas  
B.S.C. 1940, Spring Hill College  
M.B.A. 1953, Syracuse University
- Edward W. Haughney, New York  
LL.B. 1949, St. John's University, New York
- Harry Herbert Hiestand, Florida  
B.S. 1962, University of Maryland
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B.S. 1943, U.S. Military Academy  
M. of Ed.Engr. 1949, New York University
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B.S. 1949, U.S. Military Academy
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B.S. 1942, Cornell University
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B.S. 1958, University of Maryland
- James Donald Hughes, New York  
B.S. 1946, U.S. Military Academy
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B.S. 1954, U.S. Military Academy
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B.S. 1954, U.S. Naval Academy
- Richard Fot Hum, California  
A.B. 1949, A.M. 1950, University of California
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B.S. 1959, Florida State University



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 B.S. in A.E. 1959, U.S. Naval  
 Postgraduate School  
 M.S. 1960, Iowa State University of  
 Science and Technology  
 James Clarence Irwin, Connecticut  
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 B.S. 1964, University of Maryland  
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 B.S. 1958, University of Maryland  
 Earl Banks Johnson, Connecticut  
 B.S. 1942, U.S. Naval Academy  
 Merlin Louis Johnson, Florida  
 B.S. 1962, University of Michigan  
 John Lee Jones, New York  
 A.B. 1962, University of Mississippi  
 William Atkinson Jones III, New  
 Hampshire  
 A.B. 1942, University of Virginia  
 B.S. 1945, U.S. Military Academy  
 Edward Earl Kerr, Texas  
 B.S. 1942, U.S. Naval Academy  
 Darrell Francis Kirkpatrick, Florida  
 B.S. 1963, U.S. Naval Postgraduate  
 School  
 Walter Charles Klein, Michigan  
 A.B. 1939, University of Michigan  
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 Washington  
 B.S. 1951, U.S. Naval Academy  
 B.S. in A.E. 1960, U.S. Naval  
 Postgraduate School  
 Kenneth Frank Kostenbader, New  
 Mexico  
 B.S. 1953, Midwestern University  
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 M.S. in C.E. 1955, Massachusetts  
 Institute of Technology  
 Leopold Joseph LeClair, Virginia  
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 Stephen Bacon Lee, Virginia  
 A.B. 1937, Washington and Lee  
 University  
 Paul David Lehman, California  
 B.Gen.Ed. 1964, Municipal University  
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 Donald Paul Litke, Colorado  
 B.S. 1956, Colorado State University  
 Homer Samuel Long, Jr., Missouri  
 B.S. 1949, U.S. Military Academy  
 James Robert Loome, Oklahoma  
 B.S. 1946, U.S. Military Academy  
 M.B.A. 1960, Syracuse University  
 John Lowman, Missouri  
 B.S. 1954, University of Maryland  
 Earl Arthur Luehman, Florida  
 B.S. 1941, U.S. Naval Academy  
 Thomas Terence Luginbyhl, Texas  
 A.B. 1946, William Jewell College  
 M.B.A. 1963, University of Chicago  
 Archy Louis Lupia, Virginia  
 A.B. 1943, Harvard University  
 Frederick George MacQuesten, Jr., New  
 Jersey  
 B.S. 1949, Rutgers, the State  
 University  
 Lyle Eugene Mann, Illinois  
 A.B. 1956, University of Alabama  
 James Aloysius Manning, Massachusetts  
 B.S. 1962, University of Maryland  
 Robert Courtney Martin, Oklahoma  
 B.S. 1953, U.S. Naval Academy  
 William Raymond Martin, Colorado  
 B.S. 1951, Denver University  
 Edward Emil Mayer, North Dakota  
 B.Gen.Ed. 1961, Municipal University  
 of Omaha  
 Thomas Joseph Mayock, Virginia  
 A.B. 1937, A.M. 1938, Bucknell  
 University  
 Edwin Joseph McCarren, Rhode Island  
 B.B.A. 1962, Bryant College  
 Richard Dale McKay, California  
 A.B. 1954, University of California  
 William Lawrence McKeever, California  
 B.J. 1947, University of Missouri  
 M.B.A. 1963, The George Washington  
 University  
 James Francis McNulty, Rhode Island  
 B.S. 1953, Massachusetts Maritime  
 Academy  
 A.B. 1961, Tufts University  
 William Reginald McQuilkin, Louisiana  
 B.S. 1942, U.S. Naval Academy  
 John Evans Merriman, Washington  
 B.Gen.Ed. 1964, Municipal University  
 of Omaha  
 George Leonard Miller, District of  
 Columbia  
 B.Gen.Ed. 1962, Municipal University  
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 Jerry Mitchell, Jr., Pennsylvania  
 B.S. in Textiles 1949, North Carolina  
 State University at Raleigh  
 John E. Mock, Pennsylvania  
 B.S. 1947, U.S. Military Academy  
 B.S. in Ch.E., M.S. in Ch.E. 1950,  
 Ph.D. 1960, Purdue University



- Charles Kittelle Moore, Illinois  
B.S. 1944, U.S. Naval Academy
- Richard Stewart Moore, California  
A.B. 1966, The George Washington University
- John Haygood Morrison, Jr., Georgia  
B.Gen.Ed. 1961, Municipal University of Omaha
- Henry John Muller, Jr., California  
A.B. 1939, University of California at Los Angeles
- Andrew John Mungenast, Colorado  
A.B. 1965, Southern Colorado State College
- Henry Croskey Mustin, Pennsylvania  
B.S. 1955, U.S. Naval Academy  
B.S. in E.E. 1961, U.S. Naval Postgraduate School
- Ralph Winge Niesz, Washington  
B.S. 1945, U.S. Coast Guard Academy
- John William Nocita, Pennsylvania  
B.S. 1959, University of Maryland
- Cregg Parsons Nolen, Jr., Maryland  
B.Gen.Ed. 1964, Municipal University of Omaha
- Gerald Sanford Norton, Virginia  
B.S. 1939, U.S. Naval Academy
- Elmer Raymond Ochs, Illinois  
B.S. 1946, U.S. Military Academy
- Frank Joseph O'Hara, Virginia  
A.B. 1960, Chapman College
- Joseph Edward O'Leary, Texas  
B.S. 1942, Texas A&M University
- John J. Onufrak, Virginia  
B.C.E. 1953, The George Washington University
- John Luke Osteen, Jr., North Carolina  
B.S. 1948, U.S. Military Academy
- Joseph Francis Paradis, Connecticut  
B.S. 1962, University of Maryland
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B.Gen.Ed. 1961, Municipal University of Omaha
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B.S. 1954, U.S. Naval Academy
- Denning Miles Perdew, California  
B.Gen.Ed. 1964, Municipal University of Omaha
- Robert Herman Piehl, California  
B.S. 1945, U.S. Naval Academy
- Daniel Kirby Pope IV, Rhode Island  
B.S. 1952, Miami University
- Edward Hartman Potter, Florida  
A.B. 1941, Elon College
- Dana Serr Prescott, California  
A.B. 1937, Dartmouth College  
M.B.A. 1939, Harvard University
- William Tuinenburg Preston, California  
B.S. 1945, U.S. Military Academy
- William Preston Reed, Kentucky  
B.S. 1946, U.S. Military Academy
- Thomas Haydn Reese, Utah  
B.S. 1942, LL.B. 1948, University of Utah
- Robert William Reisacher, New Mexico  
B. Arch. 1943, Carnegie Institute of Technology  
M.F.A. 1948, Princeton University
- Kenneth Clay Reynolds, California  
A.B. 1957, University of California at Los Angeles
- Robert Bradley Rheault, Connecticut  
B.S. 1946, U.S. Military Academy
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A.B. in Govt. 1951, The George Washington University  
M.B.A. 1953, D.B.A. 1965, Harvard University
- Melvin Elton Richmond, Texas  
B.S. 1960, University of Maryland  
M.B.A. 1963, University of Pennsylvania
- Abraham Richard Richstein, New York  
B.S. in S.S. 1939, City University of New York  
LL.B. 1942, Fordham University  
LL.M. 1956, New York University
- Edwin Wales Robertson, South Carolina  
B.S. 1947, U.S. Military Academy
- John F. Roche III, New York  
A.B. 1952, Virginia Military Institute
- Thomas Arthur Rodgers, Pennsylvania  
A.B. 1952, Lafayette College
- Gerard Francis Rogers, Pennsylvania  
A.B. 1951, Wilkes College
- James Gerard Rosati, Illinois  
B.S. 1953, University of Maryland
- Franklin Herald Roth, Michigan  
B.S. 1950, U.S. Naval Academy
- James Lee Roush, California  
A.B. 1950, A.M. 1952, University of California at Los Angeles
- Charles Kenneth Ruiz, Texas  
B.S. 1942, U.S. Naval Academy
- Walter Gerard Runte, Pennsylvania  
A.B. 1942, University of Pennsylvania
- Bernard Brown Sapp, Georgia  
A.B. 1962, University of Maryland
- Donald Charles Sattler, South Dakota  
B.S. 1950, U.S. Naval Academy
- Louis John Schelter, Jr., New York  
B.S. 1945, U.S. Military Academy
- Clarence Howard Schmid, California  
A.B. 1943, San Diego State College
- Fred Bradley Schoomaker, Michigan  
B.S. 1945, Michigan State University
- Edward Leigh Scott, Florida  
B.S. 1948, U.S. Military Academy



- Sumner Shapiro, New Hampshire  
 B.S. 1949, U.S. Naval Academy  
 William Francis Shimonkevitz,  
 Pennsylvania  
 B.S. in Mil. Sci. 1952, Municipal  
 University of Omaha  
 James Leo Skelley, New Jersey  
 A.B. 1963, The George Washington  
 University  
 Daugherty Mason Smith, Iowa  
 B.S. 1943, U.S. Military Academy  
 Edwin Leroy Smith, Arkansas  
 LL.B. 1939, Southeastern University  
 John Richard Smith, California  
 B.S. 1962, Air Force Institute of  
 Technology  
 Kenneth Ballard Smith, Arizona  
 B.S. 1957, University of Arizona  
 Leighton Dale Smith, Illinois  
 B.S. 1954, U.S. Naval Academy  
 Dillon Snell, Texas  
 A.B. 1958, Michigan State University  
 Malvern Eugene Soper, Indiana  
 A.B. 1949, Earlham College  
 Basil Dennis Spalding, Jr., Georgia  
 B.S. 1943, U.S. Military Academy  
 Stewart Van Vliet Spragins, Florida  
 B.S. 1949, U.S. Military Academy  
 M.S. 1963, Air Force Institute of  
 Technology  
 Peter Amy Stark, Jr., Minnesota  
 B.S. 1952, U.S. Naval Academy  
 Donn Albert Starry, Kansas  
 B.S. 1948, U.S. Military Academy  
 Robert Benfred Stewart, New Hampshire  
 B.S. 1943, University of New  
 Hampshire  
 B.S. 1946, U.S. Military Academy  
 Donald Eugene Stout, Kansas  
 A.B. 1957, Stanford University  
 John McHugh Stuart, Jr., New York  
 A.B. 1939, Georgetown University  
 Bennett Joy Sukonick, Virginia  
 A.B. 1944, University of Colorado  
 Peter David Summer, Ohio  
 B.Gen.Ed. 1963, Municipal University  
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 Jay Chester Swearingen, Texas  
 B.S. 1961, University of Maryland  
 Richard Burt Taber, New York  
 A.B. 1950, Colgate University  
 Thomas Howard Tackaberry, Florida  
 A.B. 1956, Gonzaga University  
 M.S. 1960, Tulane University of  
 Louisiana  
 Alfred John Tatman, Michigan  
 B.S. 1946, U.S. Coast Guard Academy  
 Albert Donald Thomas, Georgia  
 B.S. in M.E. 1948, Duke University  
 Gerald Eustis Thomas, California  
 A.B. 1951, Harvard University  
 Walter R. Thomas, Rhode Island  
 B.S. 1961, U.S. Naval Postgraduate  
 School  
 William Holmes Tomlison, Florida  
 B.S. 1943, U.S. Military Academy  
 M.B.A. 1960, University of Alabama  
 Charles Matthew Tyson, Florida  
 B.S. 1965, University of Maryland  
 Earl Rosenquist Van Sickle, North  
 Dakota  
 B.S. 1946, U.S. Military Academy  
 John Alexander Voetsch III, New Jersey  
 A.B. 1954, Pennsylvania Military  
 College  
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 B.S. 1949, U.S. Naval Academy  
 B.S. in A.E. 1957, U.S. Naval  
 Postgraduate School  
 M.S.E. 1958, University of Michigan  
 Berrisford Harlan Walker, Florida  
 A.B. 1939, Colgate University  
 George Magoun Wallace II, Tennessee  
 B.S. 1945, U.S. Military Academy  
 Matthew Reid Wallis, Texas  
 B.S. 1946, U.S. Military Academy  
 Thomas William F. Walsh, New York  
 B.S. 1943, U.S. Naval Academy  
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 B.S. in I.E. 1952, Northwestern  
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 B.S. in Mil. Sci. 1962, Municipal  
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 Dewey Nixon Weiford, Jr., Virginia  
 B.S. 1948, Randolph-Macon College  
 James Edward Wessel, Florida  
 A.B. 1954, University of Louisville  
 William Jackson Whitener, Virginia  
 B.S. 1946, U.S. Military Academy  
 A.M. 1959, Columbia University  
 William Monitor Whitesel, Pennsylvania  
 A.B. 1947, Boston University  
 William Benson Wier, Arkansas  
 B.S. 1945, U.S. Military Academy  
 Donald Alan Williams, North Carolina  
 LL.B. 1951, University of North  
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 Mark Edward Wilt, Colorado  
 B.Gen.Ed. 1964, Municipal University  
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 William S. Wood, New York  
 B.S. 1945, U.S. Military Academy  
 Clyde Wallace Woods, Jr., Hawaii  
 B.S. 1939, Northwestern State College  
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B.S. 1957, U.S. Naval Academy  
John Michael Burke, New York  
A.B. 1960, University of Oklahoma  
James Francis Byrne, Alabama  
B.S. 1964, Auburn University  
Howard Luers Carstens, Maryland  
A.B. 1950, University of Maryland  
William Dunnigan Cassidy III, Virginia  
B.S. 1963, Hampden-Sydney College  
Anthony Joseph Celebrezze, Ohio  
B.S. 1963, U.S. Naval Academy  
Ralph Lee Close, Virginia  
B.S. 1958, Purdue University  
George Lee Coffey, West Virginia  
B.S. 1961, Virginia Polytechnic  
Institute  
Gilland Wales Corbitt, Wyoming  
A.B. 1964, University of Maryland  
Anthony Joseph Daniels, Virginia  
A.B. 1961, University of Maryland  
Jack Donald Dempsey, Texas  
A.B. 1939, University of Houston  
Kenneth Edward Egan, Maryland  
B.S. 1964, University of Maryland  
Richard Herbert Engelbrecht, Ohio  
A.B. 1953, Wartburg College  
B.S. in Communications Engineering  
1962, Long Island University  
Walter Scott Fisher, New York  
B.S. 1962, Long Island University  
William Franklin Goekin, Illinois  
B.S. 1954, University of Maryland  
Richard William Hagauer, Virginia  
A.B. 1959, The George Washington  
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Frederick Arthur Halkett, Maryland  
B.S. 1948, University of Pennsylvania

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Robert William Hanby, Jr., Florida  
B.S. 1948, U.S. Naval Academy  
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B.S. 1953, Oklahoma State University  
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Franklin James Harte, Michigan  
B.S. 1949, Michigan State University  
Arthur Dwight Hawksworth, Maryland  
B.S. 1953, University of Maryland  
Robert Andrew Hetz, Jr., Pennsylvania  
B.S. 1950, U.S. Military Academy  
Robert John Isernia, New York  
B.S. in A.E. 1963, Brooklyn  
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Logan Reed Jennings, Virginia  
B.S. 1963, Virginia Military Institute  
Charles McCoy Johnson, Jr., Florida  
B.S. 1945, U.S. Naval Academy  
Freddy Latham Jones, Texas  
A.B. 1964, Texas Christian University  
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B.S. in M.E. 1943, University of  
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B.S. in C.E. 1956, Texas A&M  
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Edward Dean Kalahar, Washington  
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Melvin Henry Kasproicz, New York  
B.S. 1964, Canisius College  
Curtis Kekoa, Hawaii  
B.S. 1956, University of Maryland  
Edward Nakapaahu Keliikoa, Hawaii  
B.S. 1960, U.S. Naval Academy  
Walter George Kennedy, Minnesota  
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B.S. 1958, University of Maryland  
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B.B.A. 1960, University of Oregon  
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A.M. 1951, University of Texas
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B.S.S. 1963, John Carroll University
- Benjamin Gray Mattox, Jr., Florida  
A.B. 1952, University of North Carolina
- Richard Henry May, Michigan  
A.B. 1964, University of Maryland
- Thomas Edward McNally, Iowa  
B.S. 1951, Loras College
- Jacob Wayne Moore, North Carolina  
A.B. 1960, Lenoir-Rhyne College
- James Riley Mundy, New Jersey  
B.S. 1937, Iowa State University of Science and Technology
- Donald Fred Parker, Ohio  
A.B. 1957, University of Oklahoma
- John Charles Parker, Pennsylvania  
B.B.A. 1960, Thiel College
- Hugh Joseph Quinn, New York  
B.S. 1955, U.S. Military Academy
- James Richard Ruffini, Massachusetts  
B.S. in Ed. 1959, Massachusetts State College at Bridgewater
- Dexter Cleveland Rumsey II, Florida  
B.B.A. 1965, The George Washington University
- John David Schiavone, Maryland  
A.B. 1954, St. Mary's Seminary and University
- David John Schmerbeck, Illinois  
A.B. 1956, The George Washington University
- Jerome Vinet Sellner, Virginia  
A.B. 1952, Academy of the New Church
- Joseph Lawrence Sestric, Missouri  
B.S. 1960, U.S. Naval Academy
- William Francis Skidmore, Tennessee  
B.Gen.Ed. 1960, Municipal University of Omaha
- Paul J. Smith, Jr., New York  
B.S. 1952, U.S. Merchant Marine Academy
- William Goeber Anthony Sympson, Jr., Kentucky  
B.S. 1955, U.S. Naval Academy  
B.S. 1961, U.S. Naval Postgraduate School
- George Reginald Tilbury, Jr., Virginia  
B.S. 1959, Duke University
- Wesley Howard Toler, Virginia  
A.B. 1962, College of William and Mary
- Robert Leland Toney, Michigan  
A.B. 1954, Michigan State University
- William James Traynor, California  
B.S. 1944, U.S. Naval Academy
- Richard Edward Vogel, Jr., Maryland  
A.B. 1950, West Liberty State College
- Riley Walter Walling, Maryland  
B.S. 1948, Wisconsin State University
- Donald Ray West, Virginia  
B.S. in B.A. 1961, University of Arkansas
- Paul Richard Westbrook, Wisconsin  
B.S. 1963, University of Wisconsin
- Frederick George Ziegler, Connecticut  
A.B. 1962, Brown University

#### MASTER OF SCIENCE IN PUBLIC ADMINISTRATION

- Michael Houston Alexander, New Jersey  
B.S. 1956, U.S. Military Academy  
M.S. 1963, Case Institute of Technology
- James Montgomery Allison, Ohio  
A.B. 1952, Ohio State University
- Robert Dale Anderson, Oklahoma  
B.S. in Aerospace 1961, University of Oklahoma
- James Albert Blair, Pennsylvania  
B.S. 1954, University of Pittsburgh
- David Lee Boerigter, Michigan  
A.B. 1965, Hope College
- John Alfred Brashear, Pennsylvania  
B.S. 1954, U.S. Naval Academy
- George Thomas Broderick, New York  
B.S. 1953, Fordham University
- Eldon Doy Carr, Missouri  
B.S. 1956, U.S. Military Academy
- Earle Russell Cole, New Jersey  
B.S. 1955, Franklin and Marshall College
- Don Robert Conway, Indiana  
B.S. in Ed. 1953, University of Alabama
- James Everett Diven, Colorado  
B.S. 1954, University of Colorado
- Elvir Anthony Fay, Texas  
A.B. 1956, Texas Western College  
LL.B. 1959, The George Washington University



- Richard Thomas Fernald, Massachusetts  
B.S. 1961, Florida State University
- Donaldson DeVries Frizzell, Maryland  
B.S. 1955, University of Maryland
- Ralph William Furtner, Maryland  
A.B. 1955, The George Washington University
- John Michael Gatt, Michigan  
A.B. 1955, University of Detroit
- Thomas Cletus Girmscheid, Nevada  
B.S. 1955, College of St. Thomas
- James McKay Greer, Kentucky  
B.S. 1955, Western Kentucky State College
- Richard Kevin Hagerty, California  
B.S.C. 1950, University of Iowa
- James Ross Harding, Ohio  
B.S. 1955, Ohio State University
- William Frank Harlin, Jr., Texas  
B.S. 1962, Oklahoma State University of Agriculture and Applied Science
- Gordon John Johnson, California  
A.B. 1961, University of Southern California
- Thomas Patrick Keenan, Jr., New York  
A.B. 1954, Iona College  
LL.B. 1957, St. John's University, New York
- Donald Arthur Kellum, Florida  
B.Gen.Ed. 1962, Municipal University of Omaha
- Kenneth Alfred Kirkpatrick, New Jersey  
B.S. in B.A. 1955, Lehigh University
- Wallace Stringfellow Knight, Georgia  
B.S. 1950, University of Georgia
- Harold D. Kochenderfer, Jr., Kansas  
B.S. 1953, Wichita State University
- Robert Leal, Kansas  
B.S. in Mil. Sci. 1964, Municipal University of Omaha
- Donald Ross March, Tennessee  
B.S. 1951, University of Tennessee
- Paul Charles Mathis, Arizona  
A.B. 1955, University of Arizona
- Albert Durfee McJoynt, Illinois  
B.S. 1955, U.S. Military Academy
- John Wendell Meserve, Ohio  
B.S. 1955, Miami University
- Patrick Thompson Murray, Florida  
B.S. in Comm. and B.A. 1951, University of Alabama
- Abraham F. Muscari, Ohio  
B.S. 1950, Marietta College
- Frederick Francis Nye III, Texas  
B.S. 1951, Texas A&M University
- Nicholas Philip Obzut, Pennsylvania  
A.B. 1955, Pennsylvania State University
- Charles James Orrico, New Jersey  
B.Gen.Ed. 1964, Municipal University of Omaha
- Roy Douglas Patrick, Ohio  
B.S. in Ed. 1953, Ohio University
- Ben Lane Patterson, Jr., Georgia  
LL.B. 1957, University of Georgia
- John Xavier Payne, Jr., California  
A.B. 1954, San Jose State College
- Dale Buckingham Peckman, Pennsylvania  
A.B. 1950, University of Pittsburgh
- Edward Eldon Pursley, California  
B.S. 1955, University of California at Los Angeles
- Donald William Rayment, Colorado  
A.B. 1954, Bowdoin College
- Patrick Lyons Renehan, Maryland  
B.S. 1956, Catholic University of America
- Russell Clinton Roberts, Michigan  
B.S. 1960, Florida State University
- James Mitchell Rockwell, New York  
B.S. 1951, U.S. Military Academy
- David Owen Schillerstrom, Illinois  
A.B. 1954, University of Illinois
- Robert Harold Schulze, Michigan  
B.S. 1952, U.S. Naval Academy  
M.S. 1960, U.S. Naval Postgraduate School
- William S. Seufert, Wisconsin  
B.S. 1950, Roosevelt University
- Ted Lewis Skeans, Texas  
B.S. 1953, Texas A&M University
- Robert Harris Smith, Georgia  
A.B. 1952, University of Buffalo
- Maurice George Stack, Florida  
B.S. 1952, Siena College
- Herbert Jerome Suskin, New York  
A.B. 1950, Washington University
- Arthur Kibby Taylor, Kentucky  
A.B. 1952, Western Kentucky State College
- John DeLaSalle Thornton, Jr., New Hampshire  
A.B. 1955, College of the Holy Cross
- Allen LeRoy Trott, District of Columbia  
A.B. 1953, University of Maryland
- Chester Alden Walborn, Alabama  
B.S. 1965, University of Houston
- Donald Eugene Weaver, Pennsylvania  
A.B. 1952, Gettysburg College
- Paul G. Ziluca, Connecticut  
A.B. 1953, Harvard University



## Winter Convocation, February 22, 1967

### COLUMBIAN COLLEGE OF ARTS AND SCIENCES

Student Marshal: Nancy Gatzke Jacoby

#### ASSOCIATE IN ARTS

Judith Rose Dillon, Virginia  
Beverley Kathryn Engelbrecht, Virginia

Susan Painter, District of Columbia  
Stanley Zoul Ugel, Maryland

#### BACHELOR OF ARTS

Kathryn Haddad Abramson, District of Columbia  
Speech Pathology and Audiology  
Carolyn Yeaw Alford, District of Columbia  
Political Science  
Kenneth Warren Allread, Virginia  
History  
Tova Lynn Altman, Maryland  
Economics  
Marta Fernandez-Araoz, Virginia  
Design  
Pamela Gayle Armstrong, Tennessee  
Psychology  
Mary Elizabeth Barnes, District of Columbia  
Sociology  
Evelyn Harriet Berk, Maryland  
Art History and Theory  
(with distinction, special honors)  
Jean Merrill Bernard, Florida  
American Thought and Civilization  
Laslo Victor Boyd, District of Columbia  
Political Science  
Judith Elenore Brown, District of Columbia  
Art History and Theory  
Judith Ann Burgess, New Jersey  
History  
Pablo Antonio Calvan, Virginia  
History  
Gail Ann Cares, Virginia  
Political Science  
Linda Edna Carlson, New Jersey  
Sociology  
John Louis Chew, Jr., Virginia  
Sociology  
Amy Pipes, District of Columbia  
Sociology  
Carole Jo Cohen, West Virginia  
Art History and Theory  
Timothy Colman, New Jersey  
Anthropology

Susanne Swett Colten, Virginia  
Sociology  
Betty Chason Cotton, District of Columbia  
Sociology  
Charles Wilson Cover, Missouri  
Russian Language and Literature  
Elizabeth Tamsin De Mowbray, England  
Drawing and Painting  
A.B. 1951, University of London, England  
Ronald Jay Denham, New York  
History  
Barbara Lee deVries, District of Columbia  
Sociology  
Alberto Diaz, Jr., Maryland  
Psychology  
Laurie Anne Diercks, Minnesota  
Sociology  
Charles Philip Dove, Maryland  
History  
Marilyn Claire Dove, Maryland  
Anthropology  
Robert Carroll Dove, Maryland  
History  
Arthur Cooper Dreeben, Virginia  
Political Science  
Sergio Duarte, District of Columbia  
Spanish Language and Literature  
Margaret Beth Eakins, Virginia  
Psychology  
Frances Elizabeth Fendall, Oregon  
Psychology  
Robert Hillis Fickley, Virginia  
Philosophy  
Coralie Flaifel, Virginia  
Mathematical Statistics  
Gerald Frank, District of Columbia  
Psychology  
Marsha Freedman, New Jersey  
Psychology



- Suzanne R. Geiger, New York  
Sociology
- Robert Lee Gerdes, California  
Political Science
- Jorge Miguel Guitart, District of  
Columbia  
Psychology
- Elizabeth Anne Gullette, Maryland  
Art History and Theory
- Anita Carol Gutnick, Pennsylvania  
Psychology
- Margaret Katherine Harding, Virginia  
Art History and Theory (special  
honors)
- Kathleen Archer Herman, Massachusetts  
Political Science
- Miriam Herscher, New York  
Sociology
- Corinne Hughes, Pennsylvania  
English Literature
- Nancy Gatzke Jacoby, Virginia  
Mathematical Statistics (with  
distinction)
- Gail Shawe Janoff, Maryland  
Anthropology
- Barbara Vereina Jeffrey, Connecticut  
Anthropology
- Carol Margaret Johnson, Connecticut  
Sociology
- Ruth Patricia Jones, Massachusetts  
History
- Dolores Stefania Kaminski, District of  
Columbia  
Sociology
- Joseph Gregory Kelly, Maryland  
Psychology
- James R. Kleeblatt, New York  
History
- Frank Richard Korowitz, New York  
Zoology
- Robert Wolfgang Kraus, District of  
Columbia  
History
- Hudson Norman LaSalle, Virginia  
History
- John Willis Lawton, Washington  
Political Science
- Timothy Reardon Lee, Virginia  
Psychology
- Thomson Lipscomb, Virginia  
Sociology
- James Ryan Lyons, Connecticut  
English Literature
- Barbara Jean Makris, Virginia  
History
- Harriet Joan Merrow, Connecticut  
Drawing and Painting
- Joseph Ray Messing, New Jersey  
Psychology
- Susan Ruth Miller, Virginia  
English Literature
- Barbara Frances Mooney, District of  
Columbia  
Sociology
- Pamela Gifford Moore, Virginia  
Drawing and Painting
- John Edgar Moravetz, Virginia  
History
- Miriam Ehlert Mucha, Florida  
Art History and Theory
- Kenneth Branyan Mundorf, Pennsylvania  
History
- Caroline Murfitt, Massachusetts  
Spanish American Literature
- Jacqueline Diane Natanson, New York  
French Language and Literature
- Nina Stewart Neilson, Pennsylvania  
History
- Jacqueline Anne Nichols, Virginia  
Sociology
- John Christopher O'Connor, Virginia  
Economics
- Edward Albert Osman, Illinois  
Political Science
- Peter Jun Osterhoudt, New York  
Economics
- Barbara Ann Paramore, District of  
Columbia  
English Literature
- Houston Saffold Park, Virginia  
Design
- Catherine Helene Pollock, District of  
Columbia  
Mathematics
- Jean Marie Rasmussen, Virginia  
Sociology
- Joseph Anthony Reilly, Jr., Maryland  
Political Science
- Patricia Anne Revey, District of  
Columbia  
History
- Antonio Abad Rios, Maryland  
Spanish American Literature
- Rhoda Ritzenberg, District of Columbia  
English Literature
- Ellen Gail Rothschild, Missouri  
Political Science
- Adrienne Allen Schleman, Virginia  
Psychology
- Shirley Ann Schwalm, Virginia  
Art History and Theory (with  
distinction)
- James Constantine Scopeletis, District  
of Columbia  
Sociology



- Glenn B. Short, Virginia  
Anthropology
- Sandra Ann Smyser, Maryland  
Spanish Language and Literature
- Charles Alan Startup, Connecticut  
Political Science
- Ellen Glenn Stelzer, Tennessee  
Art History and Theory
- Michael Joseph Stong, Virginia  
Psychology
- Murray P. Summers, Virginia  
Psychology
- Donna Rae Tambornino, Germany  
French Language and Literature
- Margaret Louise Tao, District of  
Columbia  
Psychology (with distinction, special  
honors)
- Geza Teleki, District of Columbia  
Anthropology
- Wendy Lee Tyson, District of Columbia  
Art History and Theory
- Margaret Helen Van Pelt, District of  
Columbia  
Speech
- Nancy Ann Vos, Virginia  
Dramatic Art
- Joyce Elaine Wilkinson, Virginia  
Psychology
- Barbara Jane Willmarth, New York  
Mathematical Statistics
- Judith Ann Zaritt, Massachusetts  
Sociology
- James Ernest Zerega, Maryland  
Political Science
- Robert Carl Zier, New York  
Sociology

## BACHELOR OF SCIENCE

- John Woodward Baker, Virginia  
Zoology
- Matthias Anthony Ebner, Maryland  
Chemistry
- Robert Thomas Farr, Maryland  
Mathematical Statistics
- Travis Arnold Hatfield, Maryland  
Mathematical Statistics
- Elizabeth Helen Kopelman, Maryland  
Zoology
- Burt Harris Lowe, Virginia  
Mathematics
- Richard Gillett Noble, Virginia  
Mathematics
- William Lawrence Pugh, Maryland  
Zoology
- Merlyn Michael Soukup, Maryland  
Physics (with distinction)
- George Christopher Stephens, Virginia  
Geology
- Zonesun Frank Wann, Hong Kong  
Mathematics

## BACHELOR OF SCIENCE IN MEDICAL TECHNOLOGY

- Na Gail Goldstein, Maryland
- Noemi Marquez, Virginia

## MASTER OF ARTS

- Kate Avery Arbogast, Virginia  
Economics  
A.B. 1964, The George Washington  
University
- YOUTH Nash Coffman, Virginia  
Psychology  
A.B. 1961, The George Washington  
University
- Patricia Barr Crowe, Virginia  
Psychology  
A.B. 1962, The George Washington  
University
- Jan Mary Gimlin, Virginia  
English and American Literature  
A.B. 1954, Vassar College
- James Robert Holtzman, Oklahoma  
Art History and Criticism  
A.B. 1963, Central State College,  
Oklahoma
- Milton Oliver Kepler, Virginia  
Religion  
A.B. 1946, M.D. 1949, Syracuse  
University
- Julia Ann Kisieleski, Maryland  
Psychology  
A.B. 1962, University of Maryland
- Stuart Lerner, New York  
Economics  
B.S. 1960, Cornell University



Sara Elisabeth Lister, District of  
Columbia  
Political Science  
A.B. 1961, Radcliffe College  
Herbert Kingsley Lodder, Virginia  
History  
A.B. 1955, Duke University  
B.D. 1958, Virginia Theological  
Seminary  
Norman Philip Otlin, District of  
Columbia  
History  
A.B. 1964, The George Washington  
University  
Nancy Mahloch Pflager, Virginia  
Speech Rehabilitation  
A.B. 1960, University of South Dakota

Dora Elena Röthlisberger, Colombia  
Political Science  
A.B. 1964, Michigan State University  
Rosalyn Marian Terborg, New York  
History  
A.B. 1963, Queens College, New York  
Helen Pauline Twiss, Maryland  
French Language and Literature  
A.B. 1962, Douglass College  
Howard Gilbert Weinstein, Maryland  
Psychology  
A.B. 1963, Grinnell College  
Ann Harris Zúniga, Virginia  
Spanish Language and Literature  
A.B. 1964, The George Washington  
University

#### MASTER OF SCIENCE

Beverly Torwelle Backus, Maryland  
Pharmacology  
A.B. 1962, University of California,  
Berkeley  
David Ralph Curfman, Ohio  
Anatomy  
A.B. 1965, Columbia Union College  
David Winter Elvin, California  
Zoology  
A.B. 1958, University of California,  
Berkeley  
Peter Harvey Fishman, District of  
Columbia  
Biochemistry  
B.S. 1961, Massachusetts Institute of  
Technology  
Richard Michael Gatz, Pennsylvania  
Microbiology  
B.S. 1955, University of Pittsburgh  
Allan Charles Goetz, District of  
Columbia  
Physics  
B.S. 1963, University of Washington  
William Paul Henke, Virginia  
Mathematical Statistics  
B.B.A. 1954, B.S. 1959, University  
of Pittsburgh

Irma Rachel Koski, Michigan  
Biochemistry  
A.B. 1960, The George Washington  
University  
Thelma Ruth Liebross, New York  
Physiology  
B.S. 1963, Brooklyn College  
Terrence Peter Lowe, District of  
Columbia  
Zoology  
B.S. 1960, Montana State University  
Margaret Hill Monroe, District of  
Columbia  
Biochemistry  
A.B. 1965, Connecticut College  
Athanasios G. Papaspyros, Greece  
Geology  
A.B. 1963, University of Missouri  
Douglas Cottingham Pasley, Jr.,  
Virginia  
Geology  
B.S. 1960, Furman University  
Brenda Jean Stuber, Wisconsin  
Microbiology  
B.S. 1963, University of Wisconsin

#### MASTER OF FINE ARTS

Robin Horowitz Hadl, District of  
Columbia  
Sculpture  
A.B. 1960, Sarah Lawrence College  
A.M. 1961, Columbia University

Sally Jeane Hays, Maryland  
Sculpture  
A.B. 1964, Indiana University



Arlene Linda Rubin, Virginia  
Painting  
A.B. 1965, Hood College

Malcolm Cyrus Wright, District of  
Columbia  
Ceramics  
A.B. 1962, Marlboro College

## THE GRADUATE COUNCIL

### DOCTOR OF PHILOSOPHY

- Bernard Beer, New Jersey  
Psychology  
Dissertation: *The Aversive Properties of Hypothalamic Stimulation as a Function of the Stimulation Parameters*  
B.S. 1956, Brooklyn College  
M.S. 1961, The George Washington University
- Richard Lynn Carroll, Virginia  
Psychological Geography  
Dissertation: *Measuring Differences among Family Planning Adopters in Urban and Rural West Bengal*  
A.B. 1960, A.M. 1962, The George Washington University
- Henry Bartholomew Cox, Maryland  
History  
Dissertation: *"To the Victor": A History of the French Spoliation Claims Controversy, 1793-1955*  
A.B. 1959, Princeton University  
A.M. 1962, The George Washington University
- Joseph James Doyle, Virginia  
History  
Dissertation: *Venezuela 1958: Transition from Dictatorship to Democracy*  
A.B. 1950, LaSalle College  
A.M. 1951, Fordham University
- Andrew Michael Goldner, Massachusetts  
Physiology  
Dissertation: *Alkaline Earth Metals and Membrane Permeability*  
A.B. 1956, Oberlin College  
A.M. 1957, Stanford University
- William Henry Guy, District of Columbia  
Psychology  
Dissertation: *Placebo Proneness: Its Relationship to Environmental Influences and Personality Traits*  
A.B. 1947, Northeastern University  
A.M. 1948, Boston University
- Patrick Hesketh Hernandez, New York  
Pharmacology  
Dissertation: *Studies on the Mechanism of Action of Mammalian Hepatic Azoreductase*
- Bachiller en Humanidades 1951, Institute of Humanities, Chile  
Químico-Farmacéutico 1956, University of Chile
- Howard Judd Hilton, Jr., District of Columbia  
Economics  
Dissertation: *Aid—the Problem of Definition*  
A.B. 1942, University of Washington  
A.M. 1947, American University
- Kun-yan Huang, Republic of China  
Microbiology  
Dissertation: *Metabolic Activity of Rickettsia quintana*  
M.B. 1959, National Taiwan University



- Clifford Terrence Ireland, Virginia  
 Statistics  
 Dissertation: *On Some Computational Problems of Multinomial Samples*  
 A.B. 1960, Cornell University
- James William Johnson, Maryland  
 Microbiology  
 Dissertation: *The Growth of Venezuelan Equine Encephalitis Virus in Tissue Cultures of Aedes aegypti Mosquitoes*  
 B.S. 1953, M.S. 1961, Johns Hopkins University
- Meir Kende, Indiana  
 Microbiology  
 Dissertation: *Effect of Parasympathomimetic Drugs on the Immune Response of Albino Rats Immunized with Monovalent Polio Vaccine*  
 M.S. 1960, Hebrew University, Israel
- John Campbell Landon, Maryland  
 Biology  
 Dissertation: *A Study of Some Effects of the Rous Sarcoma Virus (Schmidt-Ruppin Strain) in Chickens and Hamsters*  
 A.B. 1959, Alfred University  
 M.S. 1962, The George Washington University
- Barbara Nelson Mullens, District of Columbia  
 Psychology  
 Dissertation: *A Perceptual and Cognitive Taxonomy of Character Disorders*  
 A.B. 1942, University of Wyoming  
 A.M. 1961, The George Washington University
- Horace Benner Rees, Jr., Maryland  
 Microbiology  
 Dissertation: *Metabolic Activity of Rickettsia rickettsi*  
 A.B. 1949, A.M. 1950, University of Texas
- Arthur Irving Rubin, Maryland  
 Psychology  
 Dissertation: *A New Approach in Relating Degree of Learning to Retention in Paired Associate Verbal Learning Research*  
 B.B.A. 1957, City University of New York  
 M.S. 1959, Pennsylvania State University
- Alice Bradley Sheldon, Virginia  
 Psychology  
 Dissertation: *Preference for Familiar or Novel Stimulation as a Function of the Novelty of the Environment*  
 A.B. 1959, American University
- Donald Alan Stubbs, Maryland  
 Psychology  
 Dissertation: *The Discrimination of Stimulus Duration by Animals*  
 A.B. 1962, Washington and Lee University
- Rudolph Fred Wagner, Virginia  
 Counseling Psychology  
 Dissertation: *An Explication of Gittinger's Internalizer-Externalizer Dimension by Factor Analysis Based upon Related Personality Measures*  
 B.S. 1956, Richmond Professional Institute  
 A.M. 1957, University of Richmond
- Charles Henry Zierdt, Maryland  
 Microbiology  
 Dissertation: *The Iridescent Phenomenon, Dissociation, and Bacteriophage Action in Pseudomonas aeruginosa*  
 B.S. 1943, Pennsylvania State College  
 M.S. 1945, University of Michigan



## NATIONAL LAW CENTER

Student Marshal: Eric Vikar Youngquist

## BACHELOR OF LAWS

- |   |  |
|---|--|
| Gary Ross Alexander, Virginia<br>A.B. 1964, University of Virginia                                  | Gordon Woodward Daiger, District of<br>Columbia<br>A.B. 1953, Princeton University                             |
| I. Gordon Arbuckle, Maryland<br>A.B. 1963, University of Maryland                                   | Stephen Farrell Darley, Virginia<br>B.S. 1964, Utah State University of<br>Agriculture and Applied Science     |
| Joan E. Baker, District of Columbia<br>A.B. 1953, Reed College                                      | Martha Jane Edmisten, North Carolina<br>A.B. 1960, A.M. 1962, University of<br>North Carolina                  |
| Raymond Leo Bartos, California<br>A.B. 1964, California State College,<br>Los Angeles               | Rufus L. Edmisten, North Carolina<br>A.B. 1963, University of North<br>Carolina                                |
| David Bielawski, Maryland<br>A.B. 1955, University of North<br>Carolina                             | Alvin Ezrin, Maryland<br>B.S. in Phar. 1963, The George<br>Washington University                               |
| Gilbert Daniel Bloom, Maryland<br>B.S. 1962, University of Maryland                                 | Robert Carter Fisk, New York<br>A.B. 1963, Yale University   |
| James R. Boler, District of Columbia<br>B.M.E. 1961, University of Minnesota                        | Paul Howard Ford, Maryland<br>B.S. 1951, University of Maryland  |
| Robert Thomas Bond, Maryland<br>A.B. 1954, Southern Missionary<br>College                           | Robert Nelson Ford, Maryland<br>A.B. 1952, The George Washington<br>University                                 |
| Waymond Donald Bray, Georgia<br>B.S. 1963, Howard University  | Alpheus Edwin Forsman, Virginia<br>A.B. 1963, The George Washington<br>University                              |
| John Michael Brennan, Maryland<br>B.S. 1961, Spring Hill College                                    | Robert T. Gaston, Maryland<br>A.B. 1963, College of William and<br>Mary  |
| Frederick Francis Burgess, Jr., New York<br>B.S. 1958, U.S. Coast Guard Academy                     | Shirley Collier George, Oklahoma<br>B.S. 1954, Oklahoma State University<br>of Agriculture and Applied Science |
| Timothy Peter Burke, Virginia<br>A.B. 1963, Pennsylvania State<br>University                        | Jack J. Goehring, Jr., Virginia<br>A.B. 1963, University of Connecticut  |
| James Walter Carpenter III, Virginia<br>A.B. 1959, Oklahoma Baptist University                      | Edward William Goldstein, Maryland<br>B.S. in C.E. 1963, Pennsylvania State<br>University                      |
| Rudolph Valentino Cassani, Virginia<br>B.S. 1950, State University of New<br>York, Maritime College | Richard Verne Gose, Virginia<br>B.S. 1950, M.E. 1959, University of<br>Wyoming                                 |
| Paul Aaron Chernoff, Connecticut<br>B.S. in M.E. 1961, Tufts University                             | M.S. 1955, Northwestern University   |
| Dale Walker Church, Oregon<br>B.S. 1962, Oregon State University                                    | Sara Elizabeth Green, Virginia<br>A.B. 1960, University of North<br>Carolina                                   |
| William Daniel Cremins, Virginia<br>A.B. 1960, St. Bonaventure University                           |  |
| Thomas Edward Currier, Virginia<br>B. Engr. 1960, Yale University                                   |  |
| M. Chem. Engr. 1964, University of<br>Delaware  |  |



- Joseph Michael Hayes, Texas  
A.B. 1956, Williams College
- Tom Hiatt, Virginia  
B.S. 1963, University of Illinois
- Thomas James Hoffmann, Ohio  
A.B. 1962, Kenyon College  
B.S. 1963, University of Michigan
- Michael Lovejoy Houlston, Virginia  
A.B. 1964, The George Washington University
- Harold S. Jacobson, Virginia  
B.S. 1962, University of Wisconsin
- Gilbert Lee Jacox, Michigan  
B.S. 1960, University of Maryland
- David Wayne Johnson, Maryland  
B.S. in Engr. Phys. 1958, University of Maine
- Raymond Joseph Klapinsky, Delaware  
A.B. 1960, University of Delaware
- John Mather Kneipple, Maryland  
A.B. 1959, Yale University
- George James Konomos, District of Columbia  
B.S. in B.A. 1961, University of Arizona
- Donald Francis Lavanty, Maryland  
A.B. 1963, The George Washington University
- Albert C. Lefebvre, Maryland  
B.S.L. 1959, Georgetown University
- Charles Philip Leiner, California  
B.S. 1951, San Diego State College
- John Brownell Lynn, Iowa  
B.S. 1957, U.S. Coast Guard Academy
- Barry Lee Mack, Pennsylvania  
A.B. 1961, University of Pennsylvania
- Edward Thompson Magoffin, Jr., Virginia  
B.S. in B.A. 1963, University of Florida
- William James Mason, Virginia  
B.S. 1962, Tennessee Polytechnic Institute
- George Michael Mecham, Utah  
B.S. 1963, University of Utah
- Carl Albert Modecki, Virginia  
A.B. 1964, University of Kentucky
- John Dominick Mollozzi, New Jersey  
A.B. 1963, Jersey City State College
- Allen William Neece, Jr., Virginia  
A.B. 1964, College of Idaho
- Robert Spencer Oliver, Maryland  
A.B. 1960, Texas Christian University
- John Perazich, District of Columbia  
A.B. 1963, Oberlin College
- Richard Clarel Pflager, Virginia  
A.B. 1960, Lawrence University
- James Henry Pitts, Maryland  
B.S. 1958, University of Maryland
- Donald Gene Reiman, Virginia  
A.B. 1963, University of Washington
- Ronald Eugene Resh, Maryland  
B.S. 1960, Pennsylvania State University
- Donald Clarence Robinson, Montana  
A.B. 1963, Montana State University
- Donald Frank Rosendorf, District of Columbia  
A.B. 1964, The George Washington University
- Leonard Joseph Santisi, Maryland  
B.M.E. 1961, Cornell University
- William J. Schramm, Virginia  
B.S. 1962, Fordham University
- Richard Harris Sheehan, Jr., Virginia  
A.B. 1964, The George Washington University
- Roland H. Shubert, District of Columbia  
B.S.Pet.Engr. 1958, Colorado School of Mines
- Edward Noah Simon, Virginia  
A.B. 1963, College of William and Mary
- Edward Walter Somers, Maryland  
B.E. 1953, M.S. 1955, Johns Hopkins University
- Gerard Robert Strecker, Virginia  
B.S. in E.E. 1961, Drexel Institute of Technology
- Ross Hain Swope, Virginia  
B.S. in Phar. 1961, The George Washington University
- David Albert Tamburro, Maryland  
B.S. in M.E. 1961, Lafayette College
- Larry Jay Taylor, Virginia  
B.S. 1956, University of Utah
- Charles Joseph Tennant, District of Columbia  
B.S. in B.A. 1964, American University
- Stuart Hammond Theis, New York  
A.B. 1964, Rutgers, the State University
- Thomas Neal Tripp, Ohio  
A.B. 1964, Michigan State University
- Arthur Victor Weinberg, Maryland  
A.B. 1963, University of Maryland
- Gerald Ray Woods, Virginia  
B.S. 1963, Iowa State University of Science and Technology
- Arnold Leon Yochelson, Maryland  
B.S. 1963, Pennsylvania State University
- Donald Paul Young, Maryland  
A.B. 1961, University of Maryland
- Eric Vikar Youngquist, Michigan  
A.B. 1950, University of Michigan  
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## MASTER OF LAWS

- |  |  |
|--|--|
| Earl Philip Adamaszek, Michigan<br>A.B. 1961, Georgetown University<br>LL.B. 1964, University of Michigan  | Larry Kenneth Harrington, Virginia<br>A.B. 1962, Kentucky Wesleyan College<br>LL.B. 1965, Vanderbilt University            |
| Thomas William Bullinger, District of<br>Columbia<br>B.S. in M.E. 1961, Case Institute of<br>Technology<br>J.D. 1964, Western Reserve University | Philip Robert LeVine, Massachusetts<br>A.B. 1962, LL.B. 1965, Boston<br>University   |
| James Ignatius Burkhardt, Virginia<br>B.S. 1956, Pennsylvania State<br>University<br>LL.B. 1960, The George Washington<br>University             | William Gene McCollom, Montana<br>A.B. 1958, Harvard University<br>LL.B. 1964, University of Virginia                      |
| Mack E. Davis, District of Columbia<br>B.S. 1951, LL.B. 1957, South Carolina<br>State College  | D. Alden Newland, Virginia<br>A.B. 1960, College of William and<br>Mary<br>LL.B. 1963, The George Washington<br>University |
|  | Donald D. Schaut, Virginia<br>LL.B. 1962, University of Santa Clara  |
|  | Leonard Suchanek, Virginia<br>B.S. 1958, LL.B. 1962, Creighton<br>University   |

## MASTER OF COMPARATIVE LAW (American Practice)

- |  |   |
|--|---|
| Nivea Ruth Neuhauser, District of<br>Columbia<br>Doctor of Laws 1958, School of<br>Laws, Uruguay | Yutaka Tsuboi, Japan<br>B.S.S. 1955, Sizuoka University, Japan<br>LL.M. 1957, Meiji University, Japan |
|--|---|

## SCHOOL OF ENGINEERING AND APPLIED SCIENCE

Student Marshal: Orville Standifer, Jr.

## BACHELOR OF SCIENCE (Civil Engineering)

- |                                 |  |
|---------------------------------|--|
| Martin Anthony Felker, Maryland | Thomas Lamar Garcia, District of<br>Columbia |
|---------------------------------|--|

## BACHELOR OF SCIENCE (Electrical Engineering)

- |                                    |                                    |
|------------------------------------|------------------------------------|
| William C. Burry III, Pennsylvania | Issa Khozeimeh, Iran               |
| James Michael Diehl, Virginia      | Orville Standifer, Jr., Washington |

## BACHELOR OF SCIENCE (Electronics)

- |   |                           |
|---|---------------------------|
| Kenneth Alan Chayt, District of<br>Columbia | Lloyd L. Reiser, Virginia |
|---|---------------------------|

## BACHELOR OF SCIENCE (Machine Computers)

- |                               |                           |
|-------------------------------|---------------------------|
| Kenneth Ray Belford, Maryland | Lee Roy Young, Jr., Texas |
|-------------------------------|---------------------------|



## BACHELOR OF SCIENCE (Theoretical and Applied Mechanics)

Jon Clement Geist, Maryland

Donald Burrell Weaver, Virginia

## BACHELOR OF SCIENCE IN ENGINEERING

Jorge I. Auñón, Virginia

## MASTER OF ENGINEERING ADMINISTRATION

Gary Michael Bowers, California  
B.S. in E.E. 1961, Ohio Northern  
University

William B. Campbell, Virginia  
B.E.E. 1950, Manhattan College

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B.S. in E.E. 1955, University of Miami  
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A.B. 1958, Syracuse University  
Carmen Robert Chimera, Maryland  
B.E.E. 1957, University of Akron  
Michel Costino, Indiana

B.S. in E.E. 1954, Purdue University  
Russell Ellis Cramer III, Maryland  
B.S. in E.E. 1962, Lehigh University

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B.S. in E.E. 1950, University of  
Colorado  
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Lauren John Fleischmann, Maryland  
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B.E.E. 1957, The George Washington  
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B.Engr. 1960, Stevens Institute of  
Technology

Rufus Hardy Holloway, Texas  
B.S. 1939, U.S. Military Academy  
William Scott Jones, Maryland

B.S. in E.E. 1959, M.S. in E.E. 1961,  
Washington University

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B.S. (E.E.) 1965, The George  
Washington University

Narinder Kumar, India  
A.B. 1959, Panjab University, India  
B.S. in M.E. 1963, Howard University

Warren Gordon La Heist, Maryland  
B.Ind.Engr. 1960, Syracuse University

Hardy Liston, Jr., North Carolina  
B.S. in M.E. 1943, Howard University

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B.S. in E.E. 1961, University of  
Maryland

Stuart Melvyn Marcus, Maryland  
B.S. 1960, Brooklyn College

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B.S. in E.E. 1962, Rensselaer  
Polytechnic Institute

John G. McIlnay, Maryland  
B.S. in E.E. 1960, Pennsylvania State  
University

James Alan McRae, Virginia  
B.M.E. 1954, University of Minnesota

Joseph Frank Melichar, Alabama  
B.E.E. 1956, Auburn University

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B.S. in C.E. 1936, University of  
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B.S. in E.E. 1959, Massachusetts  
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B.S. in E.E. 1960, South Dakota  
State University

Harry Pinckernell, District of Columbia  
B.S. 1951, University of Maryland

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University of Engineering and  
Technology

Wilford Paynter Street, Jr., Maryland  
B.Ind.Engr. 1962, Georgia Institute  
of Technology

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B.S. in Chem.Engr. 1963, University  
of the Philippines

Stanley Walter Timblin, Maryland  
B.S. in E.E. 1960, North Carolina  
State University



## MASTER OF SCIENCE

- |  |  |
|--|--|
| Norman Stanley Babbitt, Virginia<br>B.S. 1964, Virginia Polytechnic<br>Institute   | Myron Eckhart, Jr., Indiana<br>B.S. 1945, U.S. Naval Academy<br>B.S. in E.E. 1949, Massachusetts<br>Institute of Technology                  |
| Elmo Francis Bradshaw III, Maryland<br>B.S. 1963, Pennsylvania State<br>University | Mustafa Guldu, District of Columbia<br>B.S. in C.E. 1964, Robert College,<br>Turkey  |
| Jack Wayne Carroll, Virginia<br>B.E.E. 1963, Georgia Institute of<br>Technology    | William Mallory McCormick,<br>Connecticut<br>B.S. 1962, Yale University  |
| Barry William Driggs, Maryland<br>A.B. 1957, B.S. in E.E. 1958, Rice<br>University | Nicholas Arthur Sloan, Maryland<br>B.S. 1956, University of Maryland<br>Heino Viil, Maryland<br>B.S. 1962, Drexel Institute of<br>Technology |

## MASTER OF SCIENCE IN ENGINEERING

- |   |  |
|---|--|
| Preston Craig Bogley, Maryland<br>B.E.E. 1955, Cornell University   | Janina Zapadko Mirski, District of<br>Columbia<br>C.E. 1951, Polish University College,<br>England |
| Richard Stuart Chamberlin, Maryland<br>B.S. in E.E. 1958, Lehigh University<br>M.E.A. 1963, The George Washington<br>University | George Thomas Munsterman, Virginia<br>B.S. in E.E. 1962, Northwestern<br>University                |
| Robert H. Doran, Virginia<br>B.S. in E.E. 1962, University of<br>Maryland   | John Patrick Reilly, Maryland<br>B.E. 1962, University of Detroit                                  |
| Wallace G. Hynds, Jr., South Carolina<br>B.S. 1945, U.S. Military Academy   | Adam Frank Renner, Virginia<br>B.S. 1956, John Carroll University                                  |
| Houshang Lolachi, Iran<br>B.S. in M.E. 1963, Howard University  | Eugene Michael Schultz, Virginia<br>B.S. in E.E. 1963, Virginia Polytechnic<br>Institute           |
| Douglas Edward MacDonald, District<br>of Columbia<br>B.E.E. 1965, The George Washington<br>University                           | Herbert Nicholas Shearin, Maryland<br>B.S. in E.E. 1962, North Carolina<br>State University        |
| William Metzger, Virginia<br>B.S. in E.E. 1953, University of<br>Illinois   | Joe Norris Ware, Virginia<br>B.S. in E.E. 1961, West Virginia<br>University                        |
| Ernest B. Miller, Maryland<br>B.E.S. 1964, Johns Hopkins University   | James Edward Whitworth, Virginia<br>B.S. in E.E. 1961, University of<br>Tennessee                  |

## DOCTOR OF SCIENCE

- |  |  |
|--|--|
| John Earl Condon, Virginia<br>Engineering Administration<br>Dissertation: <i>Mathematical Models for Multiple Incentive Contracting</i><br>B.S. 1951, University of Dayton<br>M.S. in Ind.Engr. 1956, Ohio State University  |  |
| Thong Sam Lee, Maryland<br>Electrical Engineering<br>Dissertation: <i>A Perturbation Solution of Waveguiding for Open-Gyrotropic<br/>Ferrite Rod with an Application to Radiator at 8.4 GHz</i><br>B.S. in E.E. 1959, University of Oklahoma<br>M.S. in Engr. 1961, The George Washington University |  |



Kuno Manfred Roehr, Maryland

Information Theory

Dissertation: *Limits in Real-Time Digital Filtering of Nonstationary Random Processes*

Dipl.Ing. (E.E.) 1956, Technical University, Stuttgart, Germany

Howard Stephen Wolko, Virginia

Theoretical and Applied Mechanics

Dissertation: *Investigation of an Approach to a Theory of Dislocated Continua*

B.S. in M.E. 1949, M.S. in Engr. 1953, University of Buffalo

### SCHOOL OF EDUCATION

Student Marshal: Alice Caldwell Granger

### BACHELOR OF ARTS IN EDUCATION

Roberta Charlotte Arnove, Illinois  
Social Studies

Jean Doris Baker, New Jersey  
French

Arlene Myra Berger, Delaware  
Art

Sarah Morrison Criner, Illinois  
Elementary Education

Betty Jean De Reus, Virginia  
Elementary Education

Richard Lee Duenkel, Virginia  
Business Education

Sandra Kaye Fahr, New York  
Spanish

Susan Eleana Franklin, Maryland  
Social Studies

Alice Caldwell Granger, Virginia  
English (with distinction)

Basil Leon Hamilton, Jr., Virginia  
Mathematics

Anthony Nick Kaculis, District of  
Columbia  
English

Alexis Anne Krumm, Virginia  
Biology

Mildred Ann Mohler, Virginia  
History

Rose Marie Moy, Maryland  
Art

Darrell Hiester Painter, Pennsylvania  
Elementary Education

Patricia Jo Perlman, Virginia  
Elementary Education

Alicemarie Veronica Precup, District of  
Columbia  
English

John Price, Virginia  
Physics

Catherine Elizabeth Riordan, District of  
Columbia  
Elementary Education (with  
distinction)

Sidney Sue Rosenthal, New Jersey  
Elementary Education

Paula Jane Seidman, New York  
English

Helen Carol Simpson, Virginia  
French

Sandra Gay Sweeney, Virginia  
Elementary Education

Nedda Rae Thomas, Virginia  
French

Betty Josephine Tinley, Virginia  
Social Studies

Nancy Jean Tully, Virginia  
Elementary Education

Marjorie Ann Weber, Virginia  
Elementary Education

### BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

Anthony Romasco, Virginia

Bettie Daniel Thigpen, Virginia



## MASTER OF ARTS IN EDUCATION

- Leona Goldman Abt, New Jersey  
Secondary Education  
A.B. 1964, Douglass College
- Arra Marie Bishop, Maryland  
School Administration  
B.S. 1955, Maryland State College,  
Frostburg
- Carol Ann Brewton, Virginia  
Special Education  
A.B. 1965, The George Washington  
University
- Nora Louise Burke, Virginia  
Curriculum  
A.B. in Ed. 1961, Bethany College,  
West Virginia
- Roy Matthew Burley, Maryland  
School Administration  
B.S. 1954, Maryland State College,  
Frostburg
- Mary Elizabeth Cleary, Virginia  
Secondary Education  
A.B. 1941, St. Joseph's College for  
Women
- Donald Edward Dearborn, Virginia  
School Administration  
A.B. 1961, St. Anselm's College
- Diana Dee Devers, District of Columbia  
Secondary Education  
A.B. 1965, American University
- Samuel Mayer Dodek II, Maryland  
Elementary Education  
A.B. 1955, University of Michigan
- Thelma Ellis Edler, District of Columbia  
School Administration  
B.S. 1952, D.C. Teachers College
- Joseph Martin English, Jr., Maryland  
Adult Education  
B.S. 1939, St. Joseph's College,  
Pennsylvania
- James Harold Fox, Jr., Maryland  
School Administration  
B.S. in Ed. 1963, University of  
Virginia
- Frances M. Goldfine, Maryland  
Guidance  
A.B. 1942, Hunter College
- Kathleen Elisabeth Goodall, Pennsylvania  
Secondary Education  
B.S. in Ed. 1964, Pennsylvania State  
College, West Chester
- Floyd Lee Gravitt, District of Columbia  
School Administration  
B.S. in Ed. 1959, Virginia State College
- Thelma Williams Gray, District of  
Columbia  
Elementary Education  
B.S. in Ed. 1955, D.C. Teachers College
- Ann Christina Gross, Maryland  
Guidance  
B.S. 1955, University of Maryland
- Gail Gleason Harbaugh, Virginia  
Guidance  
B.S. in Ed. 1962, West Virginia  
University
- Donald MacLean Hillock, Maryland  
Elementary Education  
B.S. in P.E. 1949, American University
- Patsy Ann Klaus, Virginia  
Secondary Education  
A.B. 1965, The George Washington  
University
- James Henry Larson, Maryland  
School Administration  
B.S. 1963, Indiana State University
- Marie Helen Marzzacco, Virginia  
Elementary Education  
B.S. 1960, Pennsylvania State  
University
- Fern Goode Nicholas, Maryland  
Guidance  
School Administration  
A.B. 1945, Berea College
- Allen Dale Olson, District of Columbia  
School Administration  
A.B. in Ed. 1953, Valparaiso  
University
- Donald Curtis Powers, Maryland  
Guidance  
B.S. in Ed. 1962, Temple University
- Altus Emory Prince, Virginia  
Secondary Education  
B.S. 1943, U.S. Military Academy
- Nancy Todd Renfro, Virginia  
Secondary Education  
B.S. in F.S. 1962, Georgetown  
University
- Paul Saylor, Pennsylvania  
Secondary Education  
B.S. 1940, Washington and Jefferson  
College
- Edward Schneider, District of Columbia  
Adult Education  
Ph.B. 1939, University of Toledo
- David Montgomery Shearman, Maryland  
Secondary Education  
B.S. in P.E. 1964, The George  
Washington University
- Steve Six, Virginia  
Guidance  
A.B. 1960, MacMurray College
- Helene Ann Stapleton, New York  
Elementary Education  
B.S. 1963, Boston College



Arlon Eugene Sullivan, District of  
Columbia  
Adult Education

B.S. 1958, University of Kansas  
Marvin Julius Taub, New York  
Secondary Education

A.B. 1961, Dickinson College  
Vergie Lois Taylor, District of Columbia  
Secondary Education  
A.B. 1958, Allen University

Brent Allen Thompson, Maryland  
School Administration  
B.S. 1957, Maryland State College,  
Bowie

Frances Yanulevich Vernosky, District  
of Columbia  
Reading

B.S. in Ed. 1953, Pennsylvania State  
College, West Chester

Claude John Waters, Maryland  
School Administration  
B.S. 1929, Morgan State College

#### ADVANCED PROFESSIONAL CERTIFICATE

Pauline Detamore Parsons, Virginia  
B.S. 1949, Morris Harvey College  
A.M. in Ed. 1961, The George  
Washington University

#### EDUCATION SPECIALIST

Martha Dunlop Anderson, District of  
Columbia  
Elementary Administration  
B.S. in Ed. 1954, Virginia State  
College  
A.M. in Ed. 1959, The George  
Washington University

Norman Ray House, District of  
Columbia  
Guidance  
A.B. 1953, A.M. 1954, Western  
Kentucky State College  
Louis R. W. Johnson, Virginia  
Supervision and Administration  
B.S. in Ed. 1936, West Virginia State  
College  
A.M. in Ed. 1961, The George  
Washington University

#### DOCTOR OF EDUCATION

Charles Raymond Heinz, Virginia  
Research and Evaluation  
Dissertation: *Development and Evaluation of an Introductory, Independent  
Study Course in Biochemistry for Able High School Students*  
B.S. in Ed. 1950, M.S. in Ed. 1959, Southern Illinois University  
A.P.C. 1963, The George Washington University

Elouise Letson Johnson, Florida

Adult Education

Dissertation: *A Descriptive Survey of Teachers of Selected Private Trade and  
Technical Schools*

A.B. 1936, Mississippi State College for Women

A.M. in Ed. 1962, The George Washington University



## SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION

Student Marshal: Robert Stephen Kamp

### BACHELOR OF BUSINESS ADMINISTRATION

- |  |  |
|--|--|
| Linda Betty Black, New York<br>Business Administration                           | Peter Kern, District of Columbia<br>Business Administration                |
| Ilene Mills Blake, Virginia<br>Business Administration                           | William Carl Kinner, Maine<br>Business Administration                      |
| Edward Roger Budny, New Jersey<br>Business Administration                        | Paul Francis Luther, Virginia<br>Business and Economic Statistics          |
| Kenneth Kinsey Cleeland, District of<br>Columbia<br>Accounting                   | John Michael McCarthy, District of<br>Columbia<br>Business Administration  |
| Harold Philip Cordova, Maryland<br>Accounting                                    | Frank Miller, New York<br>Business Administration                          |
| John William Dalseg, Virginia<br>Business Administration                         | Malcolm Lee Ream, Pennsylvania<br>Business Administration                  |
| Luther Anthony Dawson, District of<br>Columbia<br>Business Administration        | Elaine Louise Schuchman, Maryland<br>Business Administration               |
| Leland Vincent Duke, Virginia<br>Accounting                                      | Merrill Solomon, Maryland<br>Business Administration                       |
| Gerard Richard Edwards, New York<br>Accounting                                   | Richard Lockey Streaan, Virginia<br>Accounting                             |
| James Anthony Fishenden, Virginia<br>Accounting                                  | Kent Matthews Telford, Maryland<br>Business Administration                 |
| Janice Lee Hink, Virginia<br>Accounting  | Ernest L. Ten Eyck, District of<br>Columbia<br>Accounting (special honors) |
| Steven Groves Howard, Maryland<br>Business Administration                        | Theodore Richard Vogel III, Virginia<br>Business Administration            |
| Robert Stephen Kamp, Pennsylvania<br>Business Administration (special<br>honors) | Leslie Howard Weiss, Maryland<br>Accounting (special honors)               |

### MASTER OF ARTS IN GOVERNMENT

- |  |  |
|--|--|
| Keith Merlin Beardsley, Maryland<br>Public Administration<br>B.S. 1957, University of Iowa                     | James Michael Hinds, California<br>Public Administration<br>A.B. 1965, Texas Western College |
| Henry Kreitzer Benson III, Washington<br>Public Administration<br>A.B. 1962, College of William and<br>Mary    | Margo Elaine Maris, Oregon<br>Public Administration<br>A.B. 1964, Willamette University      |
| Clinton A. Britt, Washington<br>Public Administration<br>A.B. 1964, Whitworth College                          | Alan Ray Newmark, New York<br>Public Administration<br>A.B. 1964, Adelphi University         |
| George Burnett Coe, Tennessee<br>Personnel Administration<br>B.S. 1961, George Peabody College<br>for Teachers | Warren Paul Nixon, Virginia<br>Public Administration<br>A.B. 1965, Harvard University        |
| Bayyid Muhammad Faraj El-Alwany,<br>Libya<br>Personnel Administration<br>A.B. 1960, University of Libya        | Robert Maxwell Press, Missouri<br>Public Administration<br>B.J. 1964, University of Missouri |
| Peter Randolph Hamlin, Ohio<br>Public Administration<br>A.B. 1963, University of Cincinnati                    | David Arthur Pyle, Virginia<br>Personnel Administration<br>A.B. 1955, Bowdoin College        |



## MASTER OF BUSINESS ADMINISTRATION

- Robert Marion Bayless, Washington  
Business Administration  
A.B. 1951, University of Washington
- Ronald Raye Bolton, Louisiana  
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- Dan Austin Brooksher, Arkansas  
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B.S. 1949, U.S. Military Academy
- Philip Raymond Burnham, Illinois  
Business Administration  
B.S. in M.E. 1954, Illinois Institute of Technology
- Ronald Thomas Coder, Pennsylvania  
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- Verne P. Craig, Maine  
Business Administration  
B.S. 1965, University of Maryland
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Business Administration  
B.S. 1959, University of Connecticut
- Angel De Leon, Venezuela  
Health Care Administration  
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- Willard Evert Endicott, Maine  
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- Ibrahim M. Felfel, District of Columbia  
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A.B. 1962, University of Libya, Libya
- Edward Earl Fine, Jr., Virginia  
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B.S. 1948, American University
- Edwin Brandenburg Geisler, Maryland  
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B.S. 1961, University of Maryland
- Paul Edward Hill, Illinois  
Business Administration  
A.B. 1963, The George Washington University
- Rita Louise Jordan, District of Columbia  
Health Care Administration  
A.B. 1964, Transylvania College
- Francis Kaye, Virginia  
Business Administration  
A.B. 1958, Dickinson College
- Robert Paul Kowal, Connecticut  
Health Care Administration  
A.B. 1963, University of Connecticut
- Edward Eugene Lane, Illinois  
Personnel Administration  
B.S. 1952, U.S. Military Academy
- Ronald Victor Lange, Nevada  
Business Administration  
B.S. in B.A. 1951, University of Nevada
- Norma Maine Loeser, New York  
Personnel Administration  
A.B. 1958, The George Washington University
- Robert Miller Macy, Jr., District of Columbia  
Business Administration  
A.B. 1956, Harvard University
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Business Administration  
B.S. in Mil.Sc. 1961, University of Maryland
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Business Administration  
A.B. 1957, St. John's University, New York
- John Lewis Miller, Pennsylvania  
Health Care Administration  
A.B. 1964, Westminster College
- Edgar John Mixan, Illinois  
Business Administration  
B.S. 1955, Marquette University
- James Francis Obendorfer, Virginia  
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B.S. 1954, U.S. Military Academy
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Health Care Administration  
M.D. 1953, Universidad Central, Venezuela
- Peter Barron Petersen, New Jersey  
Personnel Administration  
B.S. in Mil.Sc. 1962, Municipal University of Omaha
- A. W. Radle, Jr., Texas  
Health Care Administration  
B.S. 1961, Sam Houston State College
- Philip Harold Scharf, Maryland  
Business Administration  
B.S. 1963, Columbia University
- James Eyrich Stauffer, Pennsylvania  
Business Administration  
A.B. 1964, Ursinus College
- Vernon Rodney Tate, Maryland  
Business Administration  
B.S. 1961, University of Maryland



Douglas Carlin Thigpen, Ohio  
Business Administration  
B.S. 1960, Butler University  
William Oliver Turner, Jr., Virginia  
Business Administration  
A.B. 1954, Virginia Military Institute  
John Henry Wigton, Jr., Pennsylvania  
Business Administration  
B.S. 1964, Grove City College

David Edgar Wilkinson, Maryland  
Business Administration  
B.S. 1962, State University of New  
York at Buffalo  
Paul Scott Williams, Virginia  
Business Administration  
A.B. 1951, Virginia Military Institute  
Robert Shi Young, Georgia  
Business Administration  
B.S. 1964, University of Maryland

#### MASTER OF PUBLIC ADMINISTRATION

Anthony Thatcher Green, Virginia  
Public Administration  
A.B. 1962, University of California  
at Los Angeles  
John Indakwa, Kenya  
Public Administration  
A.B. 1963, Howard University

Lois C. O'Connor, Virginia  
Personnel Administration  
A.B. in Ed. 1963, The George  
Washington University

#### DOCTOR OF BUSINESS ADMINISTRATION

Adrian Anthony Collins, New Jersey  
Business Administration  
Dissertation: *Pension Regulation: A Study of Need and Feasibility*  
A.B. 1958, University of Rochester  
LL.B. 1961, Georgetown University  
M.B.A. 1964, The George Washington University

Randall Martin Evanson, Wisconsin  
Business Administration  
Dissertation: *Predator Control and the Sheep-Raising Industry*  
B.S. in F.S. 1955, Georgetown University  
A.M. in Govt. 1961, The George Washington University

Grant Camp Moon, Virginia  
Business Administration  
Dissertation: *An Evaluation of Selected Management Aspects of the SBA  
SCORE Program*  
A.B. 1947, Brigham Young University  
M.S. 1948, New York University

Euro Moriya, Virginia  
Business Administration  
Dissertation: *A Study of Export Marketing Policy of Selected United States  
Firms in the Changing Japanese Market*  
B.B.A. 1960, Gonzaga University  
M.B.A. 1962, Marquette University



## SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS

Student Marshal: Judith Fishburn Koerner

### BACHELOR OF ARTS

Mary Carolyn Boswell, Virginia	Frank Neer Jackson, Jr., Virginia
International Affairs	International Affairs
Floyd Clarence Buell, Virginia	Judith Fishburn Koerner, Virginia
International Affairs	International Affairs
Walter Thomas Doolittle, South Dakota	
Public Affairs	

### MASTER OF ARTS

Andela E. T. Briskin, Ohio	William Frederick Marquardt III,
International Affairs	California
B.S. 1964, St. Louis University	International Affairs
Robert George Carlson, Wisconsin	A.B. in Govt. 1964, The George
International Affairs	Washington University
A.B. 1963, Beloit College	Richard Phillip McKean, Montana
Kenneth M. Christison, Montana	International Affairs
Public Affairs	A.B. 1965, University of Montana
B.S. 1964, Montana State University	Walter Scott Priest, District of Columbia
Vary Taylor Coates, District of Columbia	International Affairs
Public Affairs	A.B. 1950, Northwestern University
A.B. 1951, Furman University	Norberto P. Ras, Virginia
Dorothy Carlson Donnelly, Virginia	Economic Policy
International Affairs	D.V.M. 1948, Buenos Aires University,
A.B. 1962, The George Washington	Argentina
University	George Augustus Straub III, California
Dean Robert Gattone, New Jersey	International Affairs
International Affairs	B.S. 1965, Portland State College
A.B. 1965, Temple University	Ollie Rix Threadgill, Jr., Alabama
Delio E. Gianturco, Virginia	International Affairs
Economic Policy	A.B. 1964, Alabama College
B.S. in F.S. 1963, Georgetown	James Kay Walters, Virginia
University	International Affairs
Philip Martin John, Massachusetts	A.B. 1965, The George Washington
International Affairs	University
A.B. in Govt. 1964, The George	
Washington University	

### COLLEGE OF GENERAL STUDIES

Student Marshal: Daisy Claire Barndt

### ASSOCIATE IN ARTS

Ronald Brand Balin, District of	Daniel Smith Bishop, Florida
Columbia	Sanford Joseph Stone, New York

### BACHELOR OF ARTS

Paul Arthur Anderson, North Dakota	Daisy Claire Barndt, Virginia
Social Sciences	Social Sciences (with distinction)
Donald Keith Bain, Kansas	Ferdinand Lawrence Brand, Missouri
Social Sciences	Social Sciences



John Silvio Cannizzaro, Florida  
Social Sciences  
Marvin Knight Chase, Jr., California  
Social Sciences  
Harry William Cook, New Hampshire  
Social Sciences  
Leland Baucom Cornell, Virginia  
Social Sciences  
Edward Albert Davidson, Maryland  
Social Sciences  
Robert George DeVine, New York  
Social Sciences  
Elbert Hartwell English, Jr., Arkansas  
Social Sciences  
Margaret Hughes FitzGerald, Mississippi  
Social Sciences  
Richard William Goodale, California  
Social Sciences  
Walter Lorenzo, New York  
Social Sciences  
John Kyger Meskimen, Virginia  
Social Sciences

Joseph Mindell, New Jersey  
Social Sciences  
Edward J. Nash, Michigan  
Social Sciences  
Frank Emmanuel Petersen, Jr.,  
Pennsylvania  
Social Sciences  
William Howard Ray, Virginia  
Social Sciences  
Delmer Alfred Schatz, Virginia  
Social Sciences  
Don Jay Slee, New Jersey  
Social Sciences  
Patrick Lawrence Sullivan, Maryland  
Social Sciences  
William Lawrence Webb, Texas  
Mathematics and Physical Sciences  
John Washington Wolf, Arkansas  
Social Sciences (with distinction)  
John Zakel, Jr., Pennsylvania  
Social Sciences

#### BACHELOR OF BUSINESS ADMINISTRATION

Thomas James Carroll, Virginia  
Harlan Dean Foster, Kansas  
Robert Alfred Gaddy, Florida  
Elton Jonah Harrison, North Carolina  
Harry Edward Hill, Virginia

James Anderson Joy, Washington  
Conrad John Lindemann, Florida  
Richard Harold Mills, Texas  
John David Shytte, Jr., Maryland

#### BACHELOR OF SCIENCE IN GENERAL STUDIES

William James Crodick, Virginia  
Business Administration  
Vina Staron Oczykto, Virginia  
Business Administration

Forman James Sickels, Virginia  
Business Administration

#### MASTER OF ARTS

Gene Guerny, Maryland  
Governmental Administration  
B.S. 1953, University of Maryland  
Howard Ernest Newman, Maryland  
Governmental Administration  
B.S. in M.S. 1958, University of  
Maryland  
Gerald Michael Peltz, Virginia  
Personnel Administration  
A.B. 1960, Old Dominion College  
Paul Allen Riley, Virginia  
Personnel Administration  
B.S. 1947, U.S. Naval Academy  
B.S. in Aero.Engr. 1961, U.S. Naval  
Postgraduate School

William Eugene Tillerson, California  
Personnel Administration  
B.S. 1963, Tulane University of  
Louisiana  
Larry Dean Wolcott, Maryland  
Personnel Administration  
B.S. 1955, University of Iowa  
William Harmon Wright, Virginia  
Financial Management  
A.B. 1963, Lehigh University

#### MASTER OF ARTS IN INTERNATIONAL AFFAIRS

Andrew Lynn Burgess, Missouri  
B.S. 1938, U.S. Naval Academy

John Harllee Carmichael, Georgia  
B.S. 1936, U.S. Naval Academy



Clinton Beach Conger, Virginia  
 A.B. 1938, University of Michigan  
 J. W. Cotton, Jr., Rhode Island  
 B.S. in Pet.Engr., B.S. 1949, Texas  
 A&M University System  
 George Harvey Crist, Texas  
 A.B. in Ed. 1965, University of  
 Arizona  
 James Hamilton Cruse, California  
 B.S. 1937, U.S. Naval Academy  
 John Calvin Hill, Jr., Virginia  
 A.B. 1943, Princeton University  
 James Francis Clark Hyde, Jr., District  
 of Columbia  
 B.S. 1942, U.S. Military Academy  
 LL.B. 1949, University of Pennsylvania

William Nivison, Maine  
 B.S. 1946, U.S. Naval Academy  
 William Palmer Oliver, Jr., Missouri  
 A.B. 1941, University of Missouri  
 J.D. 1949, The George Washington  
 University  
 Kent Kane Parrot, Maryland  
 B.S. 1935, U.S. Military Academy  
 Harold Graham Shook, California  
 A.B. 1955, University of California,  
 Berkeley  
 Charles Roy Wright, Jr., Virginia  
 B.S. 1933, Davidson College

#### MASTER OF SCIENCE IN INTERNATIONAL AFFAIRS

Joseph Michael Battaglini, New York  
 A.B. 1953, Siena College  
 LL.B. 1956, Union University  
 William Robert Dolan, Jr., Rhode Island  
 B.S. 1964, University of Maryland  
 Ben Lee Fithian, Missouri  
 A.B. 1963, Alaska Methodist  
 University  
 Harry Elmer Fitzwater, Virginia  
 A.B. 1956, University of Colorado  
 Allen Berry Gaston, Texas  
 A.B. 1948, University of Denver

Albert Aal Heckman, Pennsylvania  
 B.S. 1942, U.S. Coast Guard Academy  
 Gordon Alfred Jobe, California  
 A.B. 1954, University of California  
 James Henry McFarland, Jr., Michigan  
 A.B. 1941, Wayne State University  
 Frederick Thomas Rooney, Virginia  
 A.B. 1965, The George Washington  
 University  
 Joseph Grant Smith, Ohio  
 B.S. 1947, University of Utah

#### MASTER OF SCIENCE IN BUSINESS ADMINISTRATION

Robert Henry Ewing, Texas  
 B.S. 1944, U.S. Naval Academy  
 Walter Brooks Favorite, Virginia  
 A.B. 1948, Bowdoin College  
 William Redus Glennon, New York  
 B.S. 1938, U.S. Naval Academy  
 Henry Raphael Hanssen, Missouri  
 B.S. 1943, U.S. Naval Academy  
 Lowell Truscott Keagy, Virginia  
 B.S. 1942, University of Maryland  
 Mervyn John Lilley, Virginia  
 B.Engr. 1952, Johns Hopkins  
 University  
 Roderick Frank Cameron Macpherson,  
 New Jersey  
 A.B. 1941, M.D. 1943, Wayne State  
 University  
 Alvin Robert Moorman, Ohio  
 B.S. 1958, University of Colorado

M. Domenic Palumbo, Virginia  
 B.S. in M.E. 1941, Tufts University  
 Paul Moore Paul, South Carolina  
 B.S. 1940, U.S. Naval Academy  
 Kendall Russell, Texas  
 B.S. 1945, U.S. Military Academy  
 M.S. 1950, Purdue University  
 Harold Keith Scott, Florida  
 B.S. 1949, Iowa State University of  
 Science and Technology  
 A.M. in Ed. 1955, Stanford University  
 Daniel Hamilton Seal, Louisiana  
 B.S. 1951, Southeastern Louisiana  
 College  
 Homer Grant Snodgrass, Jr., Virginia  
 B.S. 1950, East Central State College  
 Herman Franklin Son, Colorado  
 A.B. 1963, Colorado State College

#### MASTER OF SCIENCE IN FINANCIAL MANAGEMENT

Walter Alfred Andersen, Maryland  
 B.B.A. 1964, The George Washington  
 University

James Earl Bauer, Ohio  
 B.S. 1963, M.B.A. 1964, University  
 of Dayton



Robert Gustavus Beebe, Michigan  
B.G.E. 1962, Municipal University  
of Omaha  
Channing Howard Cox, Florida  
A.B. 1965, The George Washington  
University  
William James Foley, Jr., Virginia  
A.B. 1963, The George Washington  
University  
Fritz Henry Hediger, Florida  
B.S. in Engr. 1947, University of  
Michigan  
M.C.E. 1953, Rensselaer Polytechnic  
Institute

Stephen Kousz, Maryland  
B.S. 1950, Loyola College  
George Marion Maliszewski,  
Massachusetts  
B.S. 1937, U.S. Military Academy  
Louis Anthony Marckesano, Virginia  
B.S. 1946, U.S. Naval Academy  
B.S. in E.E. 1956, U.S. Naval  
Postgraduate School  
Clark Sanford Morris, Virginia  
B.Aero.Adm. 1953, Auburn University  
Joe William Parks, Arizona  
B.S. 1959, Arizona State University  
Paul David Sowell, Maryland  
B.S. 1963, Johns Hopkins University

#### MASTER OF SCIENCE IN GOVERNMENTAL ADMINISTRATION

Vaughn Lewis Beucler, Virginia  
B.B.A. 1958, University of Toledo  
Flatus Wesley Crook, Arkansas  
A.B. 1964, The George Washington  
University  
Kenneth John Kier, Virginia  
B.S. 1960, University of Maryland

Nathan Mandel, Maryland  
A.B. 1950, The George Washington  
University  
Kenneth Sutton, Virginia  
B.M.E. 1962, M.Engr. 1964,  
University of Florida  
James Christos Tsivourakis, New York  
A.B. 1956, Brooklyn College

#### MASTER OF SCIENCE IN PERSONNEL ADMINISTRATION

John Anthony Adams, Pennsylvania  
B.S. 1955, U.S. Naval Academy  
Gerald Benton Anderson, Virginia  
A.B. 1948, DePauw University  
Ed.M. 1964, College of William and  
Mary  
David King Beaudoin, New Hampshire  
B.S. 1952, University of New  
Hampshire  
Joe Francis Beene, Tennessee  
A.B. 1962, University of Tennessee  
Charles Thomas Bonfield, Virginia  
B.S. in Phar. 1957, The George  
Washington University  
Edward Arthur Branch, Virginia  
B.S. in Comm. 1959, University of  
Virginia  
Sumner Colson Burns, New Jersey  
B.Gen.Ed. 1963, Municipal University  
of Omaha  
Roger Alan Chapman, Illinois  
B.S. 1948, U.S. Naval Academy  
James Christopher Cogan, Virginia  
B.S. 1962, University of Notre Dame  
Patrick Joseph Collier, Maryland  
B.S. in Mgmt. 1963, U.S. Naval  
Postgraduate School  
Harry Warren Colonna, Virginia  
A.B. 1952, University of Virginia

William Paul Cosgrove, Rhode Island  
B.S. 1944, U.S. Naval Academy  
Eugene Martin Diamond, Illinois  
B.B.A. 1953, University of Wisconsin  
Louis Walther Dillman, Indiana  
B.S. 1949, U.S. Naval Academy  
Richard Anderson Eldridge, Virginia  
A.B. 1943, Bucknell University  
Henry Cotheal Evans, Jr., Maryland  
B.S. in M.E. 1964, University of  
Arizona  
Robert John Faust, Virginia  
B.S. 1964, University of Maryland  
Richard Anthony Feil, Washington  
A.B. 1963, Whitworth College  
Peter George Grasser, Pennsylvania  
B.Gen.Ed. 1964, Municipal University  
of Omaha  
Norman Lewis Halladay, Virginia  
B.S. 1948, U.S. Naval Academy  
Glenn Herbert Hathaway, Tennessee  
B.S. 1949, East Tennessee State  
University  
Eugene Francois Hertling, Jr., Virginia  
B.S. in B.A. 1950, Marquette  
University  
Stanley Robert Holm, Virginia  
A.B. 1938, University of Minnesota



- Charles Auburn Holston, Alabama  
A.B. 1964, The George Washington University
- Valentine Gehard Holzapfel, Hawaii  
B.S. 1939, U.S. Naval Academy
- Joel Blanney Hudson, Virginia  
B.S. 1961, East Carolina College
- William Russell Johnston, Illinois  
B.S. in Ed. 1952, Southeast Missouri State College
- John Edwin Kirsch, Maryland  
B.S. 1960, Canisius College
- Anthony Daniel Lane, Connecticut  
B.S. in B.A. 1953, University of Bridgeport
- Frank Terrance Laverty, Washington  
A.B. 1950, Carleton College, Canada
- Roy Jean Lechner, Georgia  
B.Gen.Ed. 1963, Municipal University of Omaha
- Robert Louis Lelli, New Jersey  
A.B. 1963, Syracuse University
- Cloyd Samuel Lerch, Jr., Pennsylvania  
A.B. 1963, Pennsylvania State University
- Anton Frank Mayer, Texas  
B.S. 1952, Iowa State University of Science and Technology
- Joseph Railton Morgan, Virginia  
B.S. 1953, U.S. Naval Academy  
M.S. in I.A. 1966, The George Washington University
- June Wanda Mosher, Virginia  
A.B. 1959, University of Maryland
- James Adams Nelson, Florida  
B.S. 1966, University of Maryland
- Roger Lee Oberndorf, Virginia  
B.S. 1960, Fairleigh Dickinson College
- James Cantrell Olson, Missouri  
B.Gen.Ed. 1964, Municipal University of Omaha
- Paul Revere O'Mary, Alabama  
B.S. 1952, Florence State College
- Romano John Parini, California  
B.S. in Arch. 1953, Heald Engineering College
- Theodore Donald Pasek, Missouri  
B.S. 1965, University of Missouri
- Kennedy Troy Paynter, Virginia  
Personnel Administration  
B.S. 1955, University of Maryland
- Ervin John Pierucki, Virginia  
B.N.S. 1946, Marquette University
- Birge Douthitt Reichard, Jr., Maryland  
A.B. 1960, Western Maryland College
- Joseph Bush Reynolds, Virginia  
B.S. in B.A. 1963, University of Richmond
- Kenneth Dwain Ritmire, Minnesota  
B.S. 1958, University of Minnesota
- James Alan Ronni, Ohio  
B.S. in B.A. 1955, Bowling Green State University
- Lawrence Francis Sarno, New York  
B.S. 1960, U.S. Naval Academy
- John Craig Seastead, Pennsylvania  
B.S. 1961, Pennsylvania State University
- Jack Frederick Senechal, Washington  
B.Gen.Ed. 1961, Municipal University of Omaha
- Edward Henry Skiffington, Missouri  
B.Gen.Ed. 1961, Municipal University of Omaha
- James Edward Stanton, Virginia  
B.S. 1959, Miami University
- Frank George Steiner, New York  
A.B. 1959, St. John's University, New York
- Allen Warren Stewart, New Hampshire  
B.S. 1961, U.S. Naval Academy
- Mack George Stolarski, Virginia  
A.B. 1964, College of William and Mary
- Lawrence Paul Stover, Iowa  
B.C.S. 1941, Drake University
- Selmer Allen Sundby, South Dakota  
B.Gen.Ed. 1961, Municipal University of Omaha
- Douglas Neil Syverson, Michigan  
B.S. 1939, U.S. Naval Academy
- James Calvin Tinsley, Florida  
B.S. 1963, Virginia Polytechnic Institute
- Arthur Stewart Tribbie, West Virginia  
B.S. 1959, West Virginia University
- Archie James Updike, Florida  
B.S. 1946, U.S. Naval Academy
- Kenneth Dallas Wade, Virginia  
B.S. in Ed. 1961, Concord College
- Marie Yvonne Woods, New York  
B.S. in B.A. 1960, West Virginia State College

#### MASTER OF SCIENCE IN PUBLIC ADMINISTRATION

- Henry Bowles Angle, Ohio  
B.S. 1952, Purdue University



## Annual Commencement, June 4, 1967

### COLUMBIAN COLLEGE OF ARTS AND SCIENCES

Student Marshal: Patricia Kathleen Linskey

#### ASSOCIATE IN ARTS

Loretta Jane Goerlinger, New York  
Katherine Estelle Hartman, Virginia  
Beverley Sedgwick Lomas, Connecticut  
Barbara Brignolia O'Connell, Maryland

Pamela Sue Skaggs, Virginia  
Susan Hope Ullrich, New Jersey  
John Joseph Vollmerhausen, New York

#### BACHELOR OF ARTS

John Gage Allee III, District of  
Columbia  
Dramatic Art  
Barbara Fenton Allen, California  
English Literature  
Rita Ann Alpher, District of Columbia  
Sociology  
Kenneth Macintyre Ames, Pennsylvania  
Anthropology  
Sydney Carol Archer, District of Columbia  
Sociology  
Mary Camille Ashley, Michigan  
Sociology  
Margaret Lee Backenheimer, District of  
Columbia  
Latin  
Barbara Lee Bailey, Pennsylvania  
Political Science  
Robert Anthony Barbuto, Maryland  
Political Science  
Leslie Carol Barnes, Arkansas  
English Literature  
Alan Joseph Baron, Iowa  
Political Science  
Soledad I. Barone, New York  
Philosophy  
Judith Lynne Barrett, Maryland  
Psychology  
Richard Dalton Basham, Georgia  
Anthropology  
Patricia Ann Beach, Virginia  
Psychology (special honors)  
Ronald Lee Beavers, Virginia  
Geology  
Richard David Belford, New Jersey  
Economics  
Susan Elizabeth Beneke, District of  
Columbia  
French Language and Literature  
Susan Elizabeth Benton, Virginia  
Political Science

Paul Sender Berch, District of Columbia  
Political Science  
Patricia Grace Berges, District of  
Columbia  
English Literature  
Edward Eugene Berkin, New York  
Political Science  
Janice Deborah Berman, New York  
English Literature  
Janice Gay Bernstein, New Jersey  
French Language and Literature  
Ronald Eugene Bew, Virginia  
Economics  
Judith Ann Bickell, New Jersey  
Sociology (with distinction)  
Bonnie Eaton Bing, North Carolina  
Political Science  
Shiela Marie Bishop, Virginia  
Economics  
Edward John Bogota, New Jersey  
Economics  
Gayle Lange Boozer, Virginia  
Speech Pathology and Audiology  
George Marion Bowden, Maryland  
Psychology  
Judith Chase Brinkman, Virginia  
English Literature  
Tricia Ann Broenner, Virginia  
Psychology  
Elizabeth Adalisa Bronstein, Pennsylvania  
Sociology  
Susannah Elizabeth Brooks, Pennsylvania  
Germanic Languages and Literatures  
Sylvia Rosemary Browne, Virginia  
English Literature (with distinction)  
Kathleen Victoria Bryan, District of  
Columbia  
Drawing and Painting  
Caroline McCoy Burnett, Virginia  
Political Science  
James Irving Byrd, Jr., Virginia  
Economics



- Laura Ann Campbell, Virginia  
Dramatic Art (special honors)
- Sallie Hedren Campbell, New Jersey  
Sociology
- Jane Ellen Canterbury, Virginia  
American Thought and Civilization
- Michael Jabara Carley, Louisiana  
History
- Gilbert David Carpel, Maryland  
American Thought and Civilization  
(special honors)
- Wayne Alfred Carrington, Connecticut  
History
- Michael Alan Carson, Florida  
Political Science
- Marguerite Addison Castle, Maryland  
English Literature
- Victor Chamandy, District of Columbia  
Psychology (with distinction)
- Geoffrey Chittenden, California  
Psychology
- Joseph Martin Chomski, New York  
Sociology
- Aida Choquetaxi, Bolivia  
English Literature
- Dallas Leon Christenbury, Virginia  
Economics
- David Vernon Clarridge, California  
Political Science
- Leonard Allan Cohen, Maryland  
Zoology
- Murry Bernis Cohen, Texas  
Political Science
- Louis Anthony Colaguori, New Jersey  
Political Science
- Charles Bruce Coleman, Pennsylvania  
Political Science
- Kelsey Eugene Collie, District of  
Columbia  
Dramatic Art
- William Patrick Cornwell, Virginia  
History
- Roy Allan Craig, District of Columbia  
Mathematics
- Patricia Allen Cross, District of  
Columbia  
Speech
- Elizabeth Ann Dagenhardt, District of  
Columbia  
Art History and Theory
- Janet Dahle, California  
Art History and Theory
- Marianne Damminger, Virginia  
Psychology
- Julia Angela Dansereau, Virginia  
History
- Camilla Maxine David, District of  
Columbia  
Art History and Theory
- Lynne Rue Davis, Connecticut  
Political Science
- Andrea DeAugustinis, New York  
English Literature
- Lilias Stearns DeForest, Massachusetts  
Art History and Theory
- Sylvia Jo DeLuca, Delaware  
Political Science
- William Richard Dempsey, Virginia  
History
- Mary Ellen Dervan, Virginia  
Sociology
- Susan Claudia Dessel, New Jersey  
Sociology
- Judith de Tessières, Virginia  
Art History and Theory
- John Joseph Detz, Pennsylvania  
Political Science
- Martin Dean Diner, New York  
Psychology
- Lorraine Elizabeth Doherty, South  
Carolina  
Political Science
- Margaret Elizabeth Doherty, Virginia  
History
- Edwina Russell Doran, New York  
Journalism
- Ellen Kaye Downes, Maryland  
Economics
- Janet Eileen Drance, Virginia  
Sociology
- Richard Barnett Dressner, New York  
History (with distinction)
- Danielle Demetra Dunn, Hawaii  
Music History and Literature
- Judith Ann Dwyer, District of Columbia  
Sociology
- Fred I. Edwards, Maryland  
Psychology
- Calvin Warren Ellis, California  
Geography  
A.B. 1950, The George Washington  
University
- Sandra Yetta Esterowitz, Virginia  
American Thought and Civilization
- Margie Elaine Farbman, District of  
Columbia  
Economics
- Joseph Peter Farina, Florida  
Political Science
- Alberta Jan Fasteau, Maryland  
Psychology
- Joseph Jefferson Ferber, Maryland  
Anthropology
- Clair Lamm Filbert, Connecticut  
Spanish Language and Literature
- Robert Melvin Fine, Maryland  
Medicine
- Diane Elizabeth Finnegan, Virginia  
Anthropology



- Virginia Briggs Fitzpatrick, Virginia  
Psychology
- John Wiley Fletcher, Pennsylvania  
Political Science
- Catherine Gayle Foley, Maryland  
Sociology
- Carol Lesley Fonger, New Jersey  
Anthropology
- Catherine Marie Fontana, Virginia  
Mathematics
- Sylvia Frost, Maryland  
English Literature
- Martha Jane Gaillard, Maine  
Art History and Theory
- Steven Garfinkel, District of Columbia  
Economics (with distinction)
- David Samuel Geiman, Jr., Virginia  
Political Science
- Deborah Alden Gidley, Connecticut  
Art History and Theory
- Samuel Myron Gilston, New York  
American Thought and Civilization
- Bonnie Ellen Gitlin, New York  
Psychology
- Dianne Carol Globus, New York  
Speech Pathology and Audiology
- William John Gnad, Virginia  
Political Science
- Bartley Brooks Gordon, District of  
Columbia  
Zoology
- Mary Louise Goshie, New York  
Latin American Civilization
- Ellen Mickey Graf, District of Columbia  
English Literature
- Ralph Henry Grebow, New Jersey  
History
- Edward Crocker Green, District of  
Columbia  
Anthropology
- Dan Greifman, Maryland  
Economics
- Ronald Alphonso Griffin, District of  
Columbia  
Zoology
- Louis Mark Gross, Maryland  
Zoology
- Arthur Lee Gutkin, New Jersey  
Psychology
- Peque Inmaculada Habsburg, Michigan  
French Language and Literature
- Sharon Kaye Hackal, New York  
Sociology
- Dwight Charles Hair, Virginia  
English Literature
- Brenda Ann Hanlon, Virginia  
Political Science
- Donald Richard Hanscom, Virginia  
Chemistry (special honors)
- John Norman Hanson, Wisconsin  
Philosophy
- Robert Steven Harnick, New York  
Zoology
- Pamela Dorothy Harris, Virginia  
Sociology
- Richard Arnold Harrison, Maryland  
History
- Susan Victoria Hart, Maryland  
Sociology
- Helga Monica Havelka, Virginia  
Germanic Languages and Literatures
- Benjamin Leon Hawkins, Jr., District  
of Columbia  
History
- David Richard Heath, District of  
Columbia  
Political Science (with distinction)
- Harry Lightner Heckel III, Virginia  
Political Science
- Barbara Heim, Maryland  
Germanic Languages and Literatures
- William Michael Heller, Connecticut  
Political Science
- Ann Wynn Henry, California  
Art History and Theory
- Edward Ian Herbst, New York  
Political Science
- Barbara Ann Hering, Maryland  
Sociology
- Gail Joanne Herzenberg, District of  
Columbia  
Sociology
- Joan Florence Higbee, Virginia  
French Language and Literature  
(special honors)
- Julia Marcha Hilburn, Virginia  
English Literature
- Marsha Lynn Hinko, Illinois  
Political Science
- Susan Lynn Holland, Virginia  
Drawing and Painting
- Rebecca Hooper, Connecticut  
History
- William Lee Hovey, District of Columbia  
Spanish Language and Literature
- Franklin Richard Hum, District of  
Columbia  
History
- Barbara Lee Hustedt, New York  
Philosophy (with distinction)
- Solveig Hegre Ingersoll, District of  
Columbia  
Speech Pathology and Audiology  
(special honors)
- Marc Norman Isenberg, New York  
Economics
- Gary Michael Israel, New Jersey  
History
- Imogene Gottlieb Jaffe, Virginia  
Art History and Theory
- Charles S. Jekofsky, District of Columbia  
Psychology



- Norman Bruce Jetton, Maryland  
 Medicine  
 Deborah Ann Johnson, Virginia  
 Economics  
 Sherry Lee Joseph, Pennsylvania  
 Political Science  
 Judith Faye Kainen, District of  
 Columbia  
 Anthropology  
 Marjorie Hope Kalter, New York  
 English Literature  
 Kathryn Ellen Karusaitis, New York  
 Psychology (with distinction,  
 special honors)  
 Joyce Tayeko Kasuga, Maryland  
 Psychology  
 Jay Everett Katzen, District of Columbia  
 Zoology  
 Hannah Anne Kelly, Virginia  
 Economics  
 Alene Sherry Kempler, Indiana  
 History  
 Louise Bramhall King, Massachusetts  
 Political Science  
 Beverly Fae Kinzler, Maryland  
 Journalism  
 Karen Diane Kiracofe, District of  
 Columbia  
 Mathematical Statistics  
 Karen Gladys Klebe, Connecticut  
 Political Science  
 Jill Helen Kleinman, New York  
 Spanish Language and Literature  
 Dale Metcalf Kline, District of Columbia  
 Art History and Theory  
 Stephany Frank Knight, District of  
 Columbia  
 Art History and Theory  
 Michael Joseph Konon, Michigan  
 Mathematical Statistics  
 Marvin Kurzban, New York  
 Political Science  
 Roberta Deverian Laird, Virginia  
 Political Science  
 Lawrence Searle Lapidus, Virginia  
 Political Science  
 Juline Lillian Larsen, Virginia  
 Russian Language and Literature  
 Joy Annette Lathers, Virginia  
 Philosophy  
 Geoffrey Paul Lawrence, District of  
 Columbia  
 Political Science  
 John Elson Lawrence, New York  
 History (special honors)  
 Harvey Hugh Lederman, New York  
 Zoology  
 Marc Neil Leepson, New Jersey  
 History  
 Carol Diane Lehtonen, District of  
 Columbia  
 Speech  
 Stephen Lerner, District of Columbia  
 Psychology (special honors)  
 Mary Louise Lesser, New York  
 History  
 Robert Edwin Levine, District of  
 Columbia  
 Psychology  
 Hope Ann Lewis, Virginia  
 Sculpture  
 Joseph Lewis, Rhode Island  
 History  
 Raymond Meyer Lichtman, District of  
 Columbia  
 Sociology  
 Mary Lincer, New York  
 Dramatic Art  
 Patricia Kathleen Linskey, District of  
 Columbia  
 Anthropology (with distinction)  
 Laurence Linter, New York  
 History  
 Karen Ann Lipcan, Connecticut  
 Economics  
 Cynthia Jeffress Little, Libya  
 History  
 Richard Blake Loring, District of  
 Columbia  
 Geology  
 Nellie Fay Luther, Idaho  
 Sociology  
 Marianna Page MacWilliam, Virginia  
 Political Science  
 Marilyn Susan Mahler, New York  
 Sociology  
 Kim Helene Mandel, Connecticut  
 Journalism  
 Marvin Mellard Mann, Jr., District of  
 Columbia  
 Economics  
 Gay Patrice Martin, Connecticut  
 Art History and Theory  
 Marilyn Dale Maxwell, Oklahoma  
 Art History and Theory  
 Josephine McCleary, Maryland  
 Psychology  
 James Hendrik McConkey, Virginia  
 Journalism  
 Elizabeth Gertrude McIntosh, Maryland  
 Zoology  
 Virginia Christie McKee, West Virginia  
 English Literature  
 David Michael Meloy, Virginia  
 Sociology  
 Allan Michael Menachem, New York  
 Psychology



- Gail Joyce Merklinger, New Jersey  
Sociology
- Agnes McEvoy Merrick, Virginia  
Art History and Theory
- Julia Howell Merritt, Connecticut  
Anthropology
- Joseph Henry Meyer, New York  
Political Science
- Joan Ann Milanesi, New Jersey  
Psychology
- Larry Allen Miller, Maryland  
French Language and Literature
- Lee Harvey Miller, Pennsylvania  
Zoology
- Thomas Eugene Moeser, Maryland  
Medicine
- Mary Theresa Moorcones, Virginia  
History
- Donald Kieth Moore, Maryland  
English Literature (with distinction,  
special honors)
- Ward John Moore, Maryland  
Mathematics
- Gregory Owen Morgan, Virginia  
American Thought and Civilization
- Ida Miller Morgan, District of Columbia  
Geology
- John Alan Morgan, Indiana  
Political Science
- Sonia Lynn Mouzakeotis, Illinois  
Art History and Theory
- Deborah Paula Movitz, Virginia  
English Literature
- Lynne Anna Moyer, Pennsylvania  
Psychology
- John Joseph Murphy IV, Virginia  
Political Science
- Harriet Mushinsky, District of Columbia  
Speech
- Dennis Nash, New York  
Zoology
- Nancy Lee Nelson, District of Columbia  
Psychology
- Lutz Armin Neumann, Wisconsin  
History
- Gordon David Nevius, Maryland  
Psychology
- Mark Matthew Newland, New Jersey  
Geography
- Mary Christina Nolan, Maryland  
Philosophy
- Daniel Karl Nordby, Maryland  
American Thought and Civilization
- Sally Lufkin Nutton, Massachusetts  
Art History and Theory
- Carol Ann Olsen, Maryland  
English Literature
- Joyce Ann Ortenburger, Virginia  
Art History and Theory
- Alice Joan Oxman, New York  
French Language and Literature
- Margot Elizabeth Page, California  
Classical Archeology and Greek
- Marilee Joan Parfrey, Virginia  
Fine Arts (special honors)
- Linda Kay Parke, Pennsylvania  
American Thought and Civilization
- Roy Lanier Parnell, Virginia  
Physics
- Gary Orlo Passmore, Texas  
Political Science
- Suzanne Raynor Paul, Massachusetts  
Art History and Theory
- Marie Joanne Pearson, Virginia  
History
- Karin Louise Pedrick, Virginia  
Political Science
- Deborah Dant Penrod, District of  
Columbia  
American Thought and Civilization
- Terry Allen Perl, Maryland  
Dramatic Art
- Stephen Saul Perlo, New York  
History
- Jane Mary Pfann, New York  
Sociology
- Edward Beale Plaisance, Jr., Virginia  
History
- Ronald Louis Plessner, New York  
English Literature
- Solomon William Polachek, Maryland  
Economics
- Frances Myra Poltenson, New York  
History
- Dena Marjorie Pomeroy, District of  
Columbia  
Psychology
- Stella Marie Pope, New York  
Sociology
- Douglas Harvey Poretz, Virginia  
Philosophy
- Loretta Marie Porter, New Jersey  
Political Science
- Laurie Posner, New York  
Political Science
- Linda Lee Postlethwait, North Carolina  
Political Science
- Thomas Crane Powley, Connecticut  
History
- Cynthia Woodruff Pratt, Rhode Island  
Art History and Theory
- Carla Jill Price, New York  
Anthropology
- Sandra Rae Priestman, Massachusetts  
Sociology
- William Sydney Pritikin, Illinois  
Political Science
- Harriet Locke Raiche, District of  
Columbia  
History
- Yona Jane Ralston, New York  
Spanish Language and Literature



- Clifford Erwin Reid, District of Columbia  
Economics
- Marilou Rickert, District of Columbia  
English Literature
- Rochelle Karen Roberts, Pennsylvania  
Sociology
- Raymond Campion Roberts-Brown, District of Columbia  
Anthropology
- Ina Claire Rockman, New York  
History
- Caroline Claire Roginski, New Jersey  
Sociology
- Margery Minkin Ross, Illinois  
English Literature
- Regene Claire Ross, Iowa  
Latin American Civilization (with distinction)
- James Anthony Rossi, New Jersey  
Zoology
- Anne Sherry Rothman, Maryland  
Economics (with distinction)
- Kirk Wray Rubida, South Dakota  
Economics
- Lawrence Edward Rubin, Maryland  
History (with distinction)
- Deborah Ann Rudin, Pennsylvania
- John Kenneth Rowland, Maryland  
History (special honors)  
Political Science
- David Edwin Rundquist, Virginia  
Anthropology
- Judith Helen Ryon, New York  
Sociology
- Claire Irene Samaras, Virginia  
Applied Music
- Earl Allen Sanders, North Carolina  
History
- Jeannette Lareebec Saquet, Massachusetts  
Sociology
- Anne-Marie Saunders, California  
History
- Harold David Saunders, Delaware  
Political Science
- Jewell Jessica Saunders, New York  
Sociology
- Marian Canter Scheiner, Maryland  
American Thought and Civilization
- Barry Roger Schenof, Maryland  
Economics (with distinction)
- Susan Stewart Schneider, District of Columbia  
Anthropology
- Edward Lee Schwartz, New York  
History
- Ellen Ruth Schwartz, Pennsylvania  
Speech Pathology and Audiology (with distinction, special honors)
- Gloria Singer Schwartz, Maryland  
Speech
- Jerry Steven Schwartz, New York  
Political Science
- Malcolm Schwartz, New Jersey  
Zoology
- Elizabeth Cloyd Scott, Virginia  
Psychology
- Marcia Ray Scott, Virginia  
Political Science (with distinction)
- Jennie Lee Segal, Virginia  
History
- Brigitte Monique Selcke, District of Columbia  
Art History and Theory (with distinction)
- Eli Richard Selinkoff, Delaware  
Political Science
- Peter F. Senecal, District of Columbia  
History (with distinction)
- Leanita Lynn Shelby, Oklahoma  
French Language and Literature
- Calvin Coolidge Shelton, Jr., Virginia  
Economics
- Patricia Lynn Shepherdson, Virginia  
English Literature
- Russell Allen Shields, Colorado  
Psychology
- Neil Barnett Shulman, District of Columbia  
Political Science
- Peter Ralph Silverman, New York  
Political Science
- Norma Simons, New York  
Sociology
- Charlene Luck Orebaugh Sisson, Virginia  
American Thought and Civilization
- Nancy Joan Skon, Virginia  
History (with distinction)
- John Jacob Slonaker, Pennsylvania  
History
- Camille Alice Smith, Florida  
Speech Pathology and Audiology
- James Lucien Smith, Virginia  
Latin
- Neil Henry Smith, New York  
Psychology
- Roger Kent Snodgrass, New Mexico  
English Literature (with distinction)
- Susan Lee Snouffer, Maryland  
French Language and Literature
- Allen Roger Snyder, Maryland  
Psychology (with distinction)
- James Noel Solit, New York  
History
- Maria Ioanna Soukhanov, Maryland  
Russian Language and Literature
- John Gordon Soule, Massachusetts  
Political Science
- Richard Melvin Sparks II, Virginia  
Biology



- Martha Brown Spencer, Maryland  
History
- Margaret Ellen Stahl, Virginia  
History
- Susan Kay Stanfield, Illinois  
French Language and Literature
- Linde Anneliese Stecher, Virginia  
Art History and Theory (with distinction)
- Peter Richard Steenland, New Jersey  
Political Science
- Latricia Ann Stephenson, District of Columbia  
Mathematics
- Aino Zigrida Stewart, Virginia  
Biology
- James Henry Stirling, Virginia  
Psychology
- Claudia Marilyn Strauss, New York  
History
- Edward Dickinson Studholme, Virginia  
Sociology
- Brenda Jane Sullivan, Connecticut  
American Thought and Civilization
- Hollis Spurgeon Summers III, Ohio  
English Literature
- Berit Margareta Sundquist, District of Columbia  
Political Science
- Sara Swartman, Maryland  
Sociology
- Kunio Francis Tanabe, Japan  
Political Science
- Kent Burch Taylor, California  
Psychology (special honors)
- Duncan Elliott Tebow, Maryland  
Drawing and Painting
- Asta Teemant, Maryland  
Psychology
- Yilmaz Tepedelen, District of Columbia  
Economics
- Peter Erling Thieriot, California  
Economics
- Joanne Thommen, New Jersey  
Psychology
- Charles Fulton Tobin, Jr., Maryland  
History
- Anita Sue Todras, New York  
French Language and Literature
- Phyllis Ann Tomlinson, Connecticut  
Sociology
- Bonnie Jean Towles, Maryland  
American Thought and Civilization
- Linda Ruth Trachtman, New Jersey  
Psychology
- Marilyn Ann Trueblood, Massachusetts  
Anthropology
- James Richard Ungar, New Jersey  
Zoology
- Phyllis Arnaghito Vaughan, District of Columbia  
Political Science
- Nadya Verrillo, Connecticut  
Philosophy
- John Joseph Vollmerhausen, New York  
Psychology
- Ann Elinor Wachtel, Missouri  
Fine Arts
- Eric Martin Wagshal, District of Columbia  
Medicine
- Carolyn Mary Waldie, New York  
Anthropology
- Paul Kent Walker, Delaware  
American Thought and Civilization
- Lynn-Steven Walls, Maryland  
Anthropology (with distinction)
- Yvonne Faye Weight, Virginia  
Political Science
- Cathleen Anne Weigley, Pennsylvania  
Anthropology
- Nancy Faye Weill, New York  
Sociology
- Earlene Kirby Wells, Virginia  
Geography
- Christa Wessel, Germany  
Psychology
- Harry Lee Wheeler, Maryland  
Geography
- Barbara Lamar Whittle, Maryland  
English Literature
- Ann Beatrice Wilber, District of Columbia  
French Language and Literature
- Harry Roy Wilker, New York  
Political Science (with distinction)
- Thomas Spaulding Willard, Maryland  
English Literature (with distinction, special honors)
- Thomas Eldredge Williamson III, Florida  
History
- Mary Linda Elizabeth Wilson, Maryland  
Philosophy
- Marcia Isabel Woolman, District of Columbia  
Psychology
- Mara Bonnie Yachnin, New Jersey  
Economics
- Joan Madelyn Yager, District of Columbia  
Psychology (with distinction)
- Susan Lee Yeager, Maryland  
History
- Peter Menting Yoell, New Jersey  
Political Science
- Tescia Ann Yonkers, District of Columbia  
Art History and Theory



Linda Knight Youchah, District of  
Columbia  
Anthropology  
April Louise Young, New York  
History

Michael Andrew Zamperini, Rhode  
Island  
History  
John Kurt Zier, New York  
Sociology  
Barry Alan Zolotar, New York  
American Thought and Civilization  
(special honors)

## BACHELOR OF SCIENCE

Peter Steven Aborn, Florida  
Zoology  
Terence Lee Babcock, District of  
Columbia  
Zoology  
Lorraine Balas, New Jersey  
Zoology  
William Bechtold, New York  
Biology  
William McCarty Beckner, Missouri  
Physics  
Natalie Brodzinsky, District of Columbia  
Biology  
Jeanne Anne Carriere, Maryland  
Zoology  
Janice Gayle Clouser, Virginia  
Zoology  
Eve Carol Cutler, Maryland  
Zoology  
Frederick William Diercks, Virginia  
Biology  
Frederick Jules Dunner, Maryland  
Zoology  
Clifton Sherwood Fox, Virginia  
Physics  
Lawrence Jerome Furst, Maryland  
Chemistry  
Arlene Kathryn Graner, Virginia  
Zoology  
Arnold Mark Hecker, Maryland  
Geology  
Charles Rufus Higginbotham, Virginia  
Zoology

Paul Robert Liebman, District of  
Columbia  
Zoology  
Leonard Irwin Raifman, New York  
Zoology  
Edward Carlisle Rainey, Nebraska  
Chemistry  
Michael Chandos Ridge, Virginia  
Zoology  
Diana McLaughlin Rorabaugh, Virginia  
Chemistry  
Randy Richard Ross, Maryland  
Physics (with distinction)  
Jo-Anne Biggio Ruby, District of  
Columbia  
Zoology  
Richard Fred Seelig, New Jersey  
Zoology  
Ralph Elliott Seligmann, Maryland  
Zoology  
Karen Joy Skinner, Maryland  
Chemistry (special honors)  
Linda Carol Styer, Minnesota  
Biology (with distinction)  
Julianne Hilda Thomas, South Dakota  
Zoology  
Frank Wilson, Virginia  
Zoology  
William Ward Worthy, Jr., Texas  
Chemistry  
Rhoda Binley Yarkin, Virginia  
Biology

## MASTER OF ARTS

Daniel Millen Atwood, Idaho  
English Literature  
A.B. 1961, University of Wisconsin  
Harold Raymond Booher, Maryland  
Psychology  
A.B. 1960, DePauw University  
B.S. in E.E. 1960, Rose Polytechnic  
Institute  
Jonathan Randolph Bryan, Virginia  
English and American Literature  
A.B. 1957, University of Virginia

Barbara Sue Carter, Virginia  
English and American Literature  
A.B. 1962, The George Washington  
University  
George Albert Chadwick III, Maryland  
History  
A.B. 1961, Washington and Lee  
University  
Larry Neil Chamblin, Pennsylvania  
English Literature  
A.B. 1960, University of Virginia



- John Carsten Chapin, District of  
Columbia  
History  
A.B. 1942, Yale University
- Anita Jane Davis, Minnesota  
Political Science  
A.B. 1960, The George Washington  
University
- Janet Schlegel Deans, Pennsylvania  
Economics  
A.B. 1963, Clarke College
- Benedict Fenwick FitzGerald, Virginia  
Political Science  
B.S. 1961, Xavier University
- Tullius John Frizzi, District of Columbia  
Psychology  
A.B. 1964, The George Washington  
University
- John Deane Gannon, Jr., Maryland  
History  
A.B. in Ed. 1962, The George  
Washington University
- Jerry William Gaskill, Indiana  
Mathematics  
A.B. 1963, Oberlin College
- Sheila Rae Gell, Virginia  
Psychology  
A.B. 1963, The George Washington  
University
- Joan Ely Gildemeister, District of  
Columbia  
Psychology  
A.B. 1949, University of California,  
Berkeley
- Peter Thomas Gottschalk, West Virginia  
Economics  
A.B. 1965, The George Washington  
University
- Barron Blewett Hunnicutt, District of  
Columbia  
Art History and Criticism  
A.B. 1946, Wellesley College
- Virgil Harvey Ketterling, Virginia  
Economics  
Ph.B. 1959, University of North  
Dakota
- Daniel Barry Levine, Virginia  
Economics  
A.B. 1955, Ph.D. 1962, Catholic  
University of America
- Gail Manchester Liss, Maryland  
Speech Pathology and Audiology  
A.B. in Ed. 1965, The George  
Washington University
- Therese Mackie, Maryland  
French Language and Literature  
A.B. 1965, The George Washington  
University
- Suzanne Lippincott Mallory, Maryland  
Art History and Criticism  
A.B. 1942, Bryn Mawr College
- Carl Modig, Connecticut  
Political Science  
A.B. 1965, The George Washington  
University
- Louis Timothy Nau, District of  
Columbia  
History  
A.B. 1965, The George Washington  
University
- John O'Farrell, Maryland  
Economics  
B.S. in C.E. 1928, West Virginia  
University
- Lydia Pallmé Priest, District of  
Columbia  
English Literature  
A.B. 1962, The George Washington  
University
- Diana Sue Rubin, Maryland  
Psychology  
A.B. 1963, The George Washington  
University
- Elizabeth Burke Sherwood, Maryland  
Psychology  
A.B. 1963, Gettysburg College
- James Donald Snyder, Virginia  
Political Science  
B.S. 1958, Northwestern University
- G. Jacqueline Swain, New York  
English Literature  
A.B. 1962, The George Washington  
University
- James Daniel Swartzwelder, Virginia  
Economics  
B.S. 1960, Pennsylvania State  
University
- Mary Montagu Walke, Maryland  
Psychology  
A.B. 1938, Sweet Briar College
- Mary Louise Wampole, Virginia  
French Language and Literature  
A.B. 1956, Southern Methodist  
University
- Russell Henry Weigel, Jr., Virginia  
Psychology  
A.B. 1965, Bowdoin College
- Bonnie Lou Zwicker, Virginia  
Psychology  
A.B. 1963, Bucknell University



## MASTER OF SCIENCE

Nawal Yousif Al-Ubaidy, Iraq  
Zoology  
B.S. 1960, University of Baghdad, Iraq  
Sylvia Lee Bunting, District of Columbia  
Zoology  
B.S. in Med.Tech. 1954, University  
of North Carolina  
Sue Shipley Cross, Maryland  
Microbiology  
A.B. 1961, East Carolina College  
Paul Joseph Devine, Jr., Virginia  
Mathematics  
A.B. 1965, The George Washington  
University  
Gerald Burr Grindey, Maryland  
Biochemistry  
B.S. 1962, Wisconsin State University

William Rust Hodge, District of  
Columbia  
Microbiology  
B.S. in Phar. 1951, The George  
Washington University  
Jon Conrad Nelson, Minnesota  
Biochemistry  
A.B. 1965, Concordia College  
Robert Joseph Radin, Connecticut  
Physics  
B.S. 1963, Rensselaer Polytechnic  
Institute  
Abigail Gertrude Thornton, District of  
Columbia  
Biochemistry  
B.S. 1965, The George Washington  
University

## MASTER OF FINE ARTS

Anne Louise Christler, Pennsylvania  
Painting  
A.B. 1953, Vassar College  
Susan Nair Cohen, Virginia  
Ceramics  
A.B. 1961, Smith College

Joanne Carolynne Combs, Ohio  
Dramatic Art  
A.B. 1951, University of Dayton  
Raymond Lee Twiddy III, North  
Carolina  
Painting  
B.S. 1962, University of North  
Carolina

## THE GRADUATE COUNCIL

## DOCTOR OF PHILOSOPHY

Dean Conrad Allard, Jr., Virginia  
History  
Dissertation: *Spencer Fullerton Baird and the United States Fish Commission: A Study in the History of American Science*  
A.B. 1955, Dartmouth College  
A.M. 1959, Georgetown University

Arthur Sparrow Banks, Massachusetts  
Political Science  
Dissertation: *Multivariate Analysis of A Cross-Polity Survey*  
A.B. 1951, Cornell University  
A.M. 1954, The George Washington University

Louisa Russell Bilon, Rhode Island  
Psychology  
Dissertation: *Improving Children's Creative Thinking through Group Discussion Treatment of Mothers: An Experimental Study of the Impact of Group Discussion on Maternal Attitudes and on Children's Creative Thinking*  
A.B. 1938, Bryn Mawr College  
B.D. 1942, Union Theological Seminary  
A.M. 1953, The George Washington University



James Henry Fitzgerald Brewer, Maryland

History

Dissertation: *Politics in the French Army: The Aftermath of the Dreyfus Case, 1899-1905*

A.B. 1938, LaSalle College

A.M. 1939, Niagara University

Yang-Ming Chu, Maryland

Microbiology

Dissertation: *Comparative Studies on the Immune Responses of Rabbits and Mice to Various Antigen Preparations of Mycobacterium Tuberculosis (H37Ra)*

B.S. 1959, University of Washington

M.S. 1964, The George Washington University

Harold James Dupuy, Virginia

Psychology

Dissertation: *A Theoretical Formulation and Experimental Test of Effects of Achievement and Incentive Motivation on Incidental Learning*

A.B. 1950, A.M. 1961, The George Washington University

David Edward Icenhower, Maryland

Chemistry

Dissertation: *Gold-Chlorine and Gold-Bromine Equilibria in Molten Alkali Halides*

B.S. 1953, M.S. 1956, The George Washington University

Tareq Youssief Ismael, Washington

International Relations

Dissertation: *U.A.R. Policy in Africa, General Characteristics and Two Case Studies*

A.B. 1958, Baghdad University, Iraq

A.M. 1961, Indiana University

Harry Kaplan, District of Columbia

Psychology

Dissertation: *The Use of Moderator Variables in the Analysis of Masculinity and Femininity*

A.B. 1948, A.M. 1952, The George Washington University

Basil Peter Korin, District of Columbia

Statistics

Dissertation: *On Power Robustness, and Other Properties of Various Statistics in Multivariate Analysis*

A.B. 1957, University of Connecticut

M.S. 1960, Stanford University

William Francis Edward Long, Virginia

Economics

Dissertation: *Price and Nonprice Practices under the Uncertain Conditions of Rapidly Improving Technologies: A Case Study*

A.B. 1946, A.M. 1947, The George Washington University

John Charles McCain, Virginia

Zoology

Dissertation: *The Caprellidae (Crustacea: Amphipoda) of the Western North Atlantic*

A.B. 1962, Texas Christian University

A.M. 1964, College of William and Mary



Royce William Miller, Massachusetts

Romance Languages and Literatures

Dissertation: *A Linguistic and Literary Study of the Sephardic Romancero: Historical, Moorish, Carolingian, Biblical, and Classical Ballads*

A.B. 1948, Bates College

A.M. 1953, Middlebury College

Henry Clayton Orr, District of Columbia

Biology

Dissertation: *Immunofluorescence and Virus Recovery: Correlation in a Murine Leukemia System*

B.S. 1949, Howard University

M.S. 1961, The George Washington University

William Carleton Parke, Virginia

Physics

Dissertation: *Nonlocality in Quantum Electrodynamics*

B.S. 1963, The George Washington University

James Edward Robins, Connecticut

Psychology

Dissertation: *A Study of the Effect of Syntactic Structure on the Immediate Recall of Speeded Speech Materials*

A.B. 1957, Alma College

A.M. 1961, Bowling Green State University

Senta Stephanie Rogers, District of Columbia

Chemistry

Dissertation: *The Chromic Acid Oxidation of Hydrocarbons*

A.B. 1945, Hunter College

M.S. 1948, Purdue University

Irving Charles Stone, Jr., Maryland

Geochemistry

Dissertation: *Geochemistry and Mineralogy of Continental Shelf Sediments off the South Carolina Coast*

B.S. 1952, Iowa State University of Science and Technology

A.M. 1961, The George Washington University

Edith Shores Surrey, District of Columbia

Psychology

Dissertation: *An Investigation of the Relationship of Narcotic Drug Dependence, Perceptual Style, and Stress*

A.B. 1933, Hunter College

A.M. 1934, Columbia University

#### SCHOOL OF MEDICINE

Student Marshal: Robert Allen Liss

#### DOCTOR OF MEDICINE

Kenneth Wayne Albertson, Idaho

B.S. 1965, University of Idaho

Barbara Jane Azlant, California

(with distinction)

B.S. 1962, Fresno State College

Thomas Elson Barnett, California

A.B. 1963, University of the Pacific

Richard Joel Bass, New Jersey

A.B. 1963, Lafayette College

Constance Urciolo Battle, District of Columbia

A.B. 1963, Trinity College, D.C.

William Stuart Battle, Jr., District of Columbia

B.S. 1960, College of Charleston



- Thomas Arnold Bensinger, Virginia  
B.S. 1963, Georgetown University
- Michael Leonard Berman, Maryland  
B.S. 1963, University of Maryland
- Vay John Blazina, Washington  
A.B. 1963, University of Washington
- James Shortle Botts, New Mexico  
Craig Marvin Brewer, California  
A.B. 1963, University of Washington
- Gilbert Derick Brinckerhoff, Virginia  
B.S. 1959, Lafayette College  
M.S. 1961, Massachusetts Institute of Technology
- Bruce Ira Brodtkin, Maryland  
A.B. 1963, Lafayette College
- Ronald Bayard Brown, Virginia  
A.B. 1962, Ohio Wesleyan University
- Stephen Lamoni Carr, Utah  
B.S. 1964, University of Utah
- Wayne Lyman Chan, California  
A.B. 1960, Stanford University
- Terry Paul Clemmer, Virginia  
(with distinction)  
B.S. 1964, Brigham Young University
- Burton Harry Cohn, District of Columbia  
B.S. in Phar. 1960, University of Pittsburgh
- Talmadge DeWitt Cooper III, District of Columbia  
A.B. 1964, The George Washington University
- Alvin Pete Cormack, Montana  
B.S. 1963, University of Montana
- Dennis Boyd Daughters, Utah  
Gregory Richard D'Onofrio, New York  
B.S. 1963, College of the Holy Cross
- Paul Shattuck Drohan, New York  
A.B. 1963, Washington and Jefferson College
- Richard Reed Drummond, Maryland  
A.B. 1964, The George Washington University
- Robert Leslie Erickson, Virginia  
(with distinction)  
A.B. 1958, DePauw University
- Russell Charles Ewing II, Arizona  
B.S. 1963, University of Arizona
- Michael Francis Farmer, New York  
A.B. 1963, San Francisco State College
- Dennis Joseph Feen, Maryland  
B.S. 1963, Bates College
- José Luis Fernández-Marchese, Puerto Rico  
A.B. 1963, Johns Hopkins University
- Harry Stephen Fletcher, New Jersey  
B.S. 1963, Mount St. Mary's College, Md.
- Frank John Forlini, Jr., New Jersey  
B.S. 1963, Villanova University
- William Elmer Forsythe III, Ohio  
A.B. 1963, Western Reserve University
- Alan Clifford Foster, Pennsylvania  
A.B. 1963, Franklin and Marshall College
- Ernest Raymond Gerfin, Pennsylvania  
A.B. 1963, Franklin and Marshall College
- Michael John Gothelf, New York  
A.B. 1963, Hobart College
- Martha Sumners Granger, Virginia  
A.B. 1960, Bryn Mawr College
- Robert Jay Gubler, Utah  
B.S. 1963, University of Utah
- Hedrick Baur Hanson, Indiana  
A.B. 1963, University of Washington
- Glenn Lee Haswell, Oklahoma  
A.B. 1963, DePauw University
- Evan Davis Jones, Pennsylvania  
Jacob Robert Karas, Massachusetts  
A.B. 1964, University of Massachusetts
- Mary Musselman Kass, Maryland  
A.B. 1964, The George Washington University
- Donald George Kaufman, Rhode Island  
B.S. in Phar. 1962, University of Rhode Island
- Jerry Howard Kover, New York  
A.B. 1963, Brooklyn College
- Edward Lincoln Krufky, New York  
A.B. 1963, New York University
- William Augustus Laughrun, Jr., Maryland  
A.B. 1955, Wake Forest College
- Michael Steven Lebowitz, New York  
A.B. 1963, University of Pennsylvania
- Richard Leslie Levin, Pennsylvania  
A.B. 1963, Franklin and Marshall College
- Bertram Sidney Liebross, New York  
B.S. 1962, Brooklyn College
- John Eric Liljenquist, Maryland  
(with distinction)  
B.S. 1963, Brigham Young University
- Frances Joyce Lipman, Maryland  
A.B. 1963, Yeshiva University
- Robert Allen Liss, Maryland  
(with distinction)  
A.B. 1964, The George Washington University
- Arthur Creig MacArthur, Virginia  
B.S. 1963, Brigham Young University
- Ivan Barry Mahady, Pennsylvania  
B.S. 1963, University of Scranton
- Herbert Simon Maier, New York  
A.B. 1963, Brooklyn College
- Michael Mainardi, New Jersey  
B.S. 1963, Georgetown University
- Charles Emil Manetz, Maryland  
B.S. in Phar. 1963, St. John's University, N.Y.



- Alice Marie Martinson, District of Columbia  
(with distinction)  
A.B. 1964, The George Washington University
- Stephen Sherwood Marvin, California  
A.B. 1963, University of Southern California
- John Cordell McCabe, District of Columbia  
A.B. 1963, University of North Carolina
- Craig Scott McCune, Utah  
A.B. 1962, University of Utah
- Billy Curtis McDavid, Maryland  
A.B. 1962, University of California, Davis
- Lawrence Howard Miller, Ohio  
B.S. 1962, B.S. in Ed. 1963, Ohio State University
- Stanley Gary Morrison, Pennsylvania  
A.B. 1963, Temple University
- Leslie Rodney Naman, California  
A.B. 1963, University of California, Los Angeles
- Sheldon Nassberg, New York  
B.S. 1963, University of Rhode Island
- Pat Marshall Orrock, California  
A.B. 1963, University of California, Riverside
- Chester Woodward Osborn, New York  
A.B. 1963, Columbia University
- Thomas Joseph Paolino, Jr., Rhode Island  
A.B. 1963, Brown University
- Ann L. Parker, District of Columbia  
A.B. 1963, University of California, Berkeley
- Alfred George Peters, California  
A.B. 1958, University of California, Berkeley
- Robert Edward Prager, South Carolina  
A.B. 1963, Duke University
- Andrew Joseph Presto III, New York  
B.S. 1963, Duke University
- Robert Leonard Joseph Sampson, Massachusetts  
A.B. 1963, Bates College
- Robert Clarence Saunders, Virginia  
A.B. 1962, University of Washington
- Frederick Dolezal Schirrmacher, District of Columbia  
A.B. 1963, Johns Hopkins University
- Lawrence Victor Schoenfeld, New York  
A.B. 1963, Princeton University
- Barbara Ensfield Sherwin, District of Columbia  
B.S. 1959, Antioch College
- David Bart Simon, New Jersey
- Edward Glen Southwick, Virginia  
B.S. in Phar. 1962, University of Utah
- Ruth Lebo Steerman, Maryland
- Joan Sommers Steinkuller, Maryland  
A.B. 1964, The George Washington University
- Paul Gilbert Steinkuller, Virginia  
A.B. 1963, Duke University
- Michael Jon Sylvester, Illinois  
B.S. 1963, University of Wisconsin
- George Stephen Tabor, California  
A.B. 1963, University of Vermont
- William Frederic Thompson, New York  
B.S. 1963, City College, New York
- Jean Musey Thorne, Maryland  
B.S. in Phar. 1958, The George Washington University
- Lorence Wain Trick, California
- Clyde Marquis Weaver, Virginia
- John Raymond Whiteman, Maryland
- Dennis Alan Wight, Virginia  
(with distinction)
- Art Bong Wong, California  
A.B. 1963, University of California, Berkeley
- Paul Edward Wood, New Jersey  
A.B. 1963, Drew University
- Daniel Carlton Zaworski, Ohio
- Paul Stanley Zimmons, New York  
B.S. in Phar. 1963, Union University

#### NATIONAL LAW CENTER

Student Marshal: Neil Eugene Roberts

#### BACHELOR OF LAWS

- Knut J. Aarsand, Virginia  
A.B. 1961, Marshall University
- Richard Coleman Agins, New York  
A.B. 1964, Rutgers, the State University
- Richard Gaspare Amato, District of Columbia  
A.B. 1964, Georgetown University
- David Albert Anderson, Virginia  
B.S. 1963, Purdue University



- David Joseph Angelone, New York  
B.S. 1964, Boston College
- Edward John Ashley, Maine  
A.B. 1964, Brown University
- Laura Smith Babin, New York  
A.B. 1964, Brooklyn College
- John Joseph Baker, New Jersey  
A.B. 1964, University of Pittsburgh
- David Fleming Barbour, Michigan  
A.B. 1962, University of Michigan
- Stanley Elliott Baritz, Maryland  
A.B. 1964, The George Washington University
- Peter Maxwell Baskin, Virginia  
B.S. 1964, University of Hartford
- John Richard Benefiel, District of Columbia  
B.M.E. 1963, University of Detroit
- Joseph M. Berl, New York  
A.B. 1964, Columbia University
- Richard Michael Berman, Maryland  
A.B. 1964, University of Maryland
- Richard Wallace Blackburn, Maryland  
A.B. 1964, Michigan State University
- Richard William Bliss, Delaware  
A.B. 1964, University of Delaware
- Leonard Blum, New York  
A.B. 1964, Brooklyn College
- Robert I. Brauer, Maryland  
A.B. 1964, University of Massachusetts
- Charles Madison Brewer, Pennsylvania  
A.B. 1964, Pennsylvania State University
- Michael Elliot Brozost, Maryland  
A.B. 1964, The George Washington University
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B.S. in C.E. 1960, Iowa State University of Science and Technology
- Virginia Mary Budarz, Connecticut  
A.B. 1964, Connecticut College
- Wilbert Gaines Burnette, Virginia  
A.B. 1957, Emory University
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B.S. 1962, University of Utah
- Bruce Gordon Campbell, Virginia  
B.S. in B.A. 1963, Bowling Green State University
- William Kay Carter, California  
A.B. 1964, American University
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A.B. 1963, College of William and Mary
- Barry Allan Cohen, New Jersey  
A.B. 1964, Rutgers, the State University
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A.B. 1963, Ohio University
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B.S. in Ed. 1961, City College, New York  
M.S. 1963, McGill University
- Diane Phyllis Cole, Maryland  
A.B. 1962, Pembroke College
- Steven Martin Cooper, District of Columbia  
A.B. 1964, The George Washington University
- Roger Dee Cox, Idaho  
B.S. 1964, Brigham Young University
- David Lindsay Crawford, Jr., Virginia  
B.S. in B.A. 1964, Georgetown University
- Nancy Louise Crimmins, Maryland  
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A.B. 1964, Lehigh University
- Samuel Alexander Culbertson III, Illinois  
A.B. 1963, Claremont Men's College
- Richard G. Davis, Maryland  
A.B. 1958, Lawrence University
- James Kent MacKendree Day, Maryland  
A.B. 1964, Bucknell University
- James Raymond Denbo, District of Columbia  
A.B. 1963, University of Michigan
- Herbert LeRoy DeNourie, Virginia  
B.S. in M.E. 1958, University of Notre Dame
- Peter Edward Derry, Maine  
A.B. 1962, Boston College
- Sara-Ann Determan, Virginia  
A.B. 1960, University of Delaware
- John Roger Detweiler, Jr., Virginia  
A.B. 1964, College of Idaho
- Stephen Brian Dewhurst, Virginia  
A.B. 1964, The George Washington University
- Michael Tracy Dick, Virginia  
A.B. 1964, University of Oklahoma
- Harry Ashby Dickerson, New York  
A.B. 1964, University of Vermont
- John Leslie Dietze, New York  
A.B. 1964, Hofstra University
- Michael Andrew Dilligan, New York  
B.Ch.E. 1961, Polytechnic Institute of Brooklyn
- Edward Austin Dixon, Jr., Pennsylvania  
A.B. 1962, Princeton University
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B.S. 1960, Pennsylvania State College  
A.B. 1961, Elizabethtown College



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B.S. in C.E. 1964, University of Vermont
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B.S. (S.S.) 1955, Georgetown University
- Ira Charles Edell, Maryland  
B.E.E. 1958, Polytechnic Institute of Brooklyn
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A.B. 1953, Vanderbilt University
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A.B. 1963, Northwestern University
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B.S. in E.E. 1963, University of Maryland
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B.S. 1956, Fordham University
- William H. Fitz, District of Columbia  
A.B. 1964, Washington and Lee University
- Robert Brian Fitzpatrick, Maryland  
A.B. 1964, The George Washington University
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B.S. 1964, Brigham Young University
- John Thomas Flynn, Jr., Maryland  
A.B. 1964, University of Notre Dame
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A.B. 1956, University of Virginia
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A.B. in Govt. 1964, The George Washington University
- Gordon Samuel Friedman, Ohio  
A.B. 1964, Miami University
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A.B. 1964, University of Vermont
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A.B. 1962, New Mexico Highlands University
- John Russell Gates, Pennsylvania  
A.B. 1964, Dickinson College
- Ronald M. Gates, District of Columbia  
A.B. 1963, Franklin and Marshall College
- Arthur Spencer Gilbert III, Virginia  
A.B. 1963, Vanderbilt University
- Stanton Jay Gildenhorn, District of Columbia  
A.B. 1964, The George Washington University
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A.B. 1964, University of North Carolina
- Jack Gerald Goldberg, New York  
B.B.A. 1964, The George Washington University
- Edward Leroy Goode, Pennsylvania  
A.B. 1964, Washington and Jefferson College
- Richard Foster Gordon, Utah  
B.S. 1964, Utah State University of Agriculture and Applied Science
- Michael Martin Gotkin, New York  
A.B. 1963, Brooklyn College
- John Charles Gray, Georgia  
A.B. 1964, Wesleyan University
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A.B. 1950, Denison University
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B.S. in I.E. 1960, Northeastern University
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B.S. 1964, University of Pennsylvania
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B.S. 1959, Grove City College
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A.B. 1964, Georgetown University
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A.B. 1964, Yale University
- Joseph Andrew Helyer, Virginia  
B.S. 1962, Bowling Green State University
- Elliott Mark Himelstein, Arizona  
A.B. 1962, Indiana University
- Peter Barnett Hoffman, New York  
B.S. 1964, Cornell University
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A.B. 1964, University of Michigan
- Howard Barry Horowitz, Maryland  
B.S. 1964, University of Maryland
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B.S. in Ch.E. 1964, Rensselaer Polytechnic Institute
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A.B. 1964, University of Vermont
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A.B. 1964, Johns Hopkins University
- Thomas Francis Jackson III, Tennessee  
A.B. 1962, Southwestern at Memphis
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B.S. in C.E. 1964, University of Vermont



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B.S. 1959, U.S. Naval Academy
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B.S. 1964, College of the Holy Cross
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B.S. 1963, Brigham Young University
- Gerald Bruce Kagan, Virginia  
A.B. 1964, University of Massachusetts
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B.S. in B.A. 1964, American University
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A.B. 1964, Bucknell University
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A.B. 1964, University of Rhode Island
- Edward Katze, Maryland  
A.B. 1963, University of New Hampshire
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A.B. 1964, Brooklyn College
- Michael Kimmel, Rhode Island  
A.B. 1959, Princeton University
- Stephen William Kraus, New York  
B.S. 1964, Brooklyn College
- David Patterson Lambert, Arkansas  
B.S. in B.A. 1962, University of Arkansas
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B.S. in C.E. 1964, City College, New York
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B.S. in E.E. 1958, University of Connecticut
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B.C.S. 1963, Seattle University
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A.B. 1964, Southwestern at Memphis
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B.S. 1964, Carnegie Institute of Technology
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- Michael Paul Lefkowitz, New Jersey  
A.B. 1964, Tufts University
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B.S. in E.E. 1960, Howard University
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A.B. 1964, Brooklyn College
- John Waugh Leonard, New York  
A.B. 1964, Cornell University
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A.B. 1964, Morehouse College
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B.S. 1957, University of Wyoming
- Barry Gordon Leveen, New Jersey  
A.B. 1964, Rutgers, the State University
- Ivan Ira Light, New York  
A.B. 1964, State University of New York at Binghamton
- William F. Lindquist, Illinois  
A.B. 1961, St. Ambrose College
- John David Lister, Maryland  
B.M.E. 1963, Rensselaer Polytechnic Institute
- Roger Stuart Long, Michigan  
A.B. 1964, Michigan State University
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A.B. 1964, College of the Holy Cross
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A.B. 1964, Brown University
- Barry Charles Maloney, New York  
B.S. in B.A. 1964, Georgetown University
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B.S. in Pet.Engr. 1959, University of Pittsburgh
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B.S. in B.A. 1964, University of Missouri
- David Henderson Martin, Maryland  
A.B. 1962, Western Maryland College
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A.B. 1960, North Texas State University
- Arnold Steven Mazur, New York  
A.B. 1964, State University of New York at Buffalo
- Lucy Kelly McCabe, District of Columbia  
A.B. 1961, Manhattanville College of the Sacred Heart
- Michael John McGarry, Vermont  
A.B. 1964, University of Vermont
- Marcus Page McGraw, District of Columbia  
A.B. 1964, University of North Carolina
- Samuel Alexander McLoughlin, Vermont  
A.B. 1949, University of the Americas, Mexico
- Samuel Robert Mechanic, Pennsylvania  
B.S. 1964, Fairleigh Dickinson University
- Eugene Horace Harvey Meer, New York  
A.B. 1964, St. Lawrence University
- Richard Warren Meirowitz, New York  
A.B. 1964, University of Vermont
- Jack Menache, Virginia  
A.B. 1963, University of the Americas, Mexico
- Allan Franklin Meyer, New Jersey  
A.B. 1964, Syracuse University



- Michael Stephen Meyer, New York  
A.B. 1964, Brandeis University
- John Philip Meyerholz, Virginia  
B.B.A. 1963, M.B.A. 1964, University of Michigan
- John Mark Miller, Maryland  
A.B. 1958, Bridgewater College
- Edward Cornell Mills, Virginia  
A.B. 1964, The Citadel
- Rosemary Alice Mooney, District of Columbia  
A.B. 1964, Drake University
- George Douglas Morris, Maryland  
B.S. in C.E. 1961, University of Kentucky
- Leslie Gibson Morse, New York  
A.B. 1964, Barnard College
- Kenneth Lane Mostow, District of Columbia  
A.B. 1963, Oberlin College
- Douglas Grant Moxham, Massachusetts  
A.B. 1964, Tufts University
- David Charles Nevins, Minnesota  
A.B. 1962, University of Minnesota
- Richard Joseph Ney, District of Columbia  
A.B. 1964, Duke University
- William Nortman, New York  
A.B. 1964, Brooklyn College
- Daniel Michael O'Connell, Jr., New York  
A.B. 1964, University of Virginia
- Stephen P. Oggel, District of Columbia  
A.B. 1964, Vanderbilt University
- Douglas Keith Olson, District of Columbia  
A.B. 1964, University of Maryland
- Mark Lawrence Palmer, New York  
A.B. 1964, Brooklyn College
- Lawrence Joseph Pascal, Virginia  
A.B. 1964, St. Anselm's College
- James Norman Penrod, Vermont  
B.S. 1963, U.S. Naval Academy
- James Pinson Perry, Virginia  
B.S. in B.A. 1964, The Citadel
- David Andreas Peterson, California  
A.B. 1964, Occidental College
- Jean-Claude Petilon, District of Columbia  
A.B. 1964, Pennsylvania State University
- James Harold Phillips, Virginia  
B.S. in E.E. 1960, Rose Polytechnic Institute
- Mary Alice Planty, Illinois  
A.B. 1964, Smith College
- Alexandra Patricia Polyzoides, District of Columbia  
A.B. 1964, Bryn Mawr College
- Carl Robert Ramey, New York  
A.B. 1962, Marietta College
- A.M. 1964, Michigan State University
- Neil Steven Reiter, New York  
A.B. 1964, Brooklyn College
- Edwin Herbert Reitman, Maryland  
B.S. 1964, University of Pennsylvania
- Howard M. Rensin, Maryland  
A.B. 1964, Syracuse University
- Janet Elizabeth Rice, Virginia  
A.B. 1964, Wheaton College, Ill.
- Julian Leon Ridlen, Indiana  
A.B. 1963, Anderson College, Ind.
- John-Douglas Robb, Nevada  
A.B. 1964, University of Nevada
- Neil Eugene Roberts, Maryland  
(with distinction)  
B.S. in E.E. 1964, University of Maryland
- Arnold Jeffry Robinson, Maryland  
A.B. 1964, University of Vermont
- Andrew Martin Rockman, New Jersey  
A.B. 1964, Rutgers, the State University
- Peter John Romeo, Virginia  
B.S. in B.A. 1964, Georgetown University
- Michael J. Romig, Maryland  
A.B. 1964, The George Washington University
- Harold I. Rosen, Pennsylvania  
B.B.A. 1964, The George Washington University
- James David Rosenbaum, Maryland  
A.B. 1964, American University
- Paul Alan Rosenbaum, New York  
B.S. 1964, Springfield College
- Rita Reitman Rosenkrantz, Maryland  
B.S. in B.A. 1954, Ohio State University
- Steven Lee Ross, Maryland  
A.B. 1964, Johns Hopkins University
- John Robert Rowe, Idaho  
A.B. 1964, University of Idaho
- Andrew Frederick Sayko, Jr., Virginia  
B.S. 1963, Providence College
- Dewey Donnell Schade, Missouri  
B.J. 1964, University of Missouri
- Lenore Schreiber, New York  
A.B. 1964, The George Washington University
- Ralph Raymond Scott, New York  
A.B. 1964, University of Vermont
- Donald H. Seifman, Virginia  
A.B. 1964, New York University
- Gerald L. Shadwick, Virginia  
B.S. 1954, Kansas State University of Agriculture and Applied Science
- Robert Phillip Shapiro, New Jersey  
B.S. 1964, New York University



- Richard David Silver, Massachusetts  
A.B. 1964, Boston University
- Albert Neal Simmons, Maryland  
A.B. 1964, The George Washington University
- Robert Barry Sims, New York  
A.B. 1964, Franklin and Marshall College
- Robert Arthur Singewald, Connecticut  
A.B. 1964, University of Notre Dame
- John Godman Skinner, District of Columbia  
A.B. 1964, Georgetown University
- Margery Waxman Smith, New York  
A.B. 1964, Smith College
- Jeffrey Graham Spragens, Ohio  
A.B. 1964, University of Cincinnati
- Richard Miles Stanislaw, Washington  
A.B. 1964, University of Washington
- Stephen Shane Stark, District of Columbia  
A.B. 1964, University of Denver
- Harlis Dale Starnes, Virginia  
B.S. 1960, East Tennessee State University
- Lucille M. Stefovich, Pennsylvania  
A.B. 1964, Pennsylvania State University
- Albert Hugh Stephens, Florida  
B.S. 1959, Florida State University
- Robert Charles Stone, Florida  
A.B. 1964, American University
- Ronald Michael Stone, Massachusetts  
B.B.A. 1964, University of Massachusetts
- Eric James Swenson, Nebraska  
A.B. 1964, Stanford University
- Clifford Woodworth Taylor, Virginia  
A.B. 1964, University of Michigan
- Robert K. Tendler, Virginia  
A.B. 1964, Amherst College
- Peter Morgan Thall, Connecticut  
A.B. 1964, Columbia University
- Bert Masao Tomasu, Hawaii  
Ed.B. 1961, University of Hawaii
- Edward John Trojnar, District of Columbia  
B.S. 1962, University of Rochester
- Don Charles Uthus, Virginia  
A.B. 1963, The George Washington University
- Marc Richard Wagshal, Maryland  
B.B.A. 1964, The George Washington University
- Charles Stratton Walsh, District of Columbia  
B.S. 1964, University of Maryland
- Michael O. Warnecke, Maryland  
B.S. in M.E. 1963, Purdue University
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A.B. in Govt. 1964, The George Washington University
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A.B. 1964, Lafayette College
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A.B. 1964, Trinity College, Conn.
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B.S. 1964, College of the Holy Cross
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A.B. 1963, University of Pennsylvania
- Sidney B. Williams, Jr., Arkansas  
B.S. in Ch.E. 1961, University of Wisconsin
- David Ian Wilson, Missouri  
A.B. 1963, Southern Illinois University
- Roger Charles Wolf, Ohio  
A.B. 1962, Harvard University
- Michael Lew Woods, Texas  
A.B. 1964, Texas Technological College
- Hugh James Yarrington, Maryland  
A.B. 1964, Randolph-Macon College
- Jann Leong Yuen, Hawaii  
A.B. 1958, University of Hawaii
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B.E.E. 1963, City College, New York
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A.B. 1963, Oberlin College

## MASTER OF LAWS

- Fred Warren Bennett, Maryland  
A.B. 1964, American University
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A.B. 1962, City College, New York
- LL.B. 1965, The George Washington University
- William Mark Burch II, Michigan  
LL.B. 1949, Detroit College of Law
- Donald Clarke Casey, Nebraska  
B.S. in C.E. 1961, J.D. 1964, University of Nebraska



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LL.B. 1942, Catholic University of America  
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B.S. 1957, Northwestern University  
LL.B. 1960, University of Michigan  
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A.B. 1963, Brown University  
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Daniel Robert O'Neill, Missouri  
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B.E.E. 1962, University of Virginia  
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B.S. 1959, Pennsylvania State University  
LL.B. 1963, Temple University  
Joseph Leonard Sarisky, District of Columbia  
A.B. 1958, American University  
LL.B. 1960, Georgetown University  
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B.S. in M.E. 1962, Carnegie Institute of Technology  
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John Francis Rey, Virginia  
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## BACHELOR OF SCIENCE (Communications)

Francis Charles Crotty, Jr., Virginia  
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Walter Carroll Scales, Virginia  
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## BACHELOR OF SCIENCE (Electrical Engineering)

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Lowell Kay Harman, District of  
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Edward Joel Kessler, Virginia  
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James David Pavlis, District of Columbia  
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Douglas Miel Taylor, Maryland  
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## BACHELOR OF SCIENCE (Engineering Science)

Michael Jonathon Viehman, Virginia

## BACHELOR OF SCIENCE (Machine Computers)

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B.S. 1948, U.S. Naval Academy

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B.S. 1962, St. Francis College  
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B.S. 1950, U.S. Coast Guard Academy
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B.S. in M.E. 1962, Texas A&M University
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B.S. 1963, University of Maryland
- William Alvin Thayer, Virginia  
B.S. 1959, Syracuse University
- Lawrence William Twitchell, Virginia  
B.S. 1957, U.S. Naval Academy
- William Clayton Whitehead, Maryland  
B.S. 1959, Worcester Polytechnic Institute
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B.S. 1951, U.S. Coast Guard Academy  
B.S. 1962, U.S. Naval Postgraduate School
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B.S. in E.E. 1962, University of Akron
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B.S. 1959, Massachusetts Institute of Technology
- B.S. 1959, College of William and Mary
- Alan James Mikeska, Virginia  
B.S. in M.E. 1958, Pennsylvania State University
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B.M.E. 1965, The George Washington University
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B.S. in E.E. 1961, Michigan State University

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B.S. 1962, Clarkson College of Technology
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B.S. in E.E. 1956, Case Institute of Technology
- William Herbert Ellis, Jr., Virginia  
B.S. 1958, Purdue University
- James Alan Fenimore, Maryland  
B.S. 1965, Rutgers, the State University
- Alfred John Ferrari, Connecticut  
B.E.E. 1963, Manhattan College
- Charles William Field, Jr., California  
B.S. in Engr. 1964, California State College at Long Beach



- James Markwood Goodrich, California  
A.B. 1962, Stanford University
- Allen Paul Herskowitz, Virginia  
B.S. in E.E. 1963, University of Miami
- Glenn Arthur Larson, Maryland  
B.S. in E.E. 1964, Massachusetts  
Institute of Technology
- Harold Delbert Lawson, Maryland  
B.S. in E.E. 1956, Carnegie Institute  
of Technology
- John Clyde Linz, Maryland  
B.E.E. 1962, Gannon College
- Charles Santo Maiorana, District of  
Columbia  
B.S.E. 1963, University of Michigan
- Charles Thomas Montgomery, Maryland  
B.S. 1964, Virginia Polytechnic  
Institute
- Jeffrey Vaughn Odom, Maryland  
B.S. 1964, University of Maryland
- Peter Edward O'Neill, Jr., Maryland  
B.E.E. 1962, Gannon College
- Richard Ian Perlut, Virginia  
B.S. in M.E. 1962, Purdue University
- William Rossi, Jr., Virginia  
B.S. in E.E. 1961, Massachusetts  
Institute of Technology
- Fred Raymond Skolnick, Maryland  
B.S. in E.E. 1963, Drexel Institute of  
Technology
- Charles Morehead Smith III, Virginia  
B.S.E. 1960, Vanderbilt University
- Philip Geshon Stein, Maryland  
A.B. 1962, Columbia University
- Paul Vantoch, District of Columbia  
Graduation 1952, Czech Academy of  
Technology, Prague, Czechoslovakia
- Ronald John Wells, Maryland  
B.E.E. 1963, Villanova University

#### DOCTOR OF SCIENCE

- John Eftis, District of Columbia  
Theoretical and Applied Mechanics  
Dissertation: *A Nonlinear Continuum Theory of Alkali Metals Based on  
Quantum Mechanics*  
B.C.E. 1952, City College, New York  
M.S. in C.E. 1958, Columbia University
- Mohamed Fadl Ahmed Fadl, United Arab Republic  
Measurement Science  
Dissertation: *Effect of Gas Mixture and Pressure on the Wavelength, and Profile  
of the 633 NM Line of Neon Emitted by He<sup>1</sup>-Ne<sup>18</sup> Discharge Tubes*  
B.S. 1959, Alexandria University, Egypt  
M.S. in Engr. 1964, The George Washington University
- Arnold Charles Meltzer, Maryland  
Network Theory  
Dissertation: *An RC-Single Transistor Two-port Synthesis Technique*  
B.S. in Engr. 1958, M.S. in Engr. 1961, The George Washington University

#### SCHOOL OF EDUCATION

Student Marshal: Theresa Anne Gray

#### BACHELOR OF ARTS IN EDUCATION

- Elizabeth Clay Anderson, Pennsylvania  
Elementary Education
- Evelyn Hirsh Auerbach, Maryland  
Elementary Education
- Carol Beth Baum, District of Columbia  
Secondary Education
- Sandra Judith Block, District of  
Columbia  
Secondary Education
- Jean Andrea Carlson, District of  
Columbia  
Elementary Education
- Marjorie Jane Cohn, New York  
Elementary Education
- Nicol Lewis Cylkowski, Connecticut  
Elementary Education
- Linda Louise Domscheit, Virginia  
Secondary Education



- Patricia Josephine Fahey, Illinois  
Elementary Education
- Charlotte Rose Marie Fisher, District  
of Columbia  
Secondary Education
- Ellen Elizabeth Fleming, Virginia  
Secondary Education
- Frances S. Foster, New Jersey  
Secondary Education
- Elizabeth S. Francis, Virginia  
Elementary Education
- Lynne E. Frankel, Ohio  
Elementary Education
- Nina S. Freeman, New Jersey  
Elementary Education
- Jo Anne Fulton, Virginia  
Elementary Education
- Edna McInnis Gachet, Virginia  
Secondary Education
- Miriam Nathan Goldberg, Maryland  
Elementary Education
- Marcia Hope Golden, Delaware  
Secondary Education
- Susan Austin Goldstein, New York  
Secondary Education
- Richard Penrose Gorrell, Virginia  
Secondary Education
- Sandra Eileen Gottlieb, New Jersey  
Elementary Education
- Theresa Anne Gray, Virginia  
Secondary Education (with  
distinction)
- Sandra Lee Greenberg, New Jersey  
Secondary Education
- Susan Vivian Grossman, New Jersey  
Secondary Education
- Carol Lee Johnson, New York  
Secondary Education
- Diane Barbara Kalt, New York  
Elementary Education
- Susan Mona Kane, New York  
Elementary Education
- Carolyn Katz, New Jersey  
Elementary Education
- Mary Love Kelly, Maryland  
Elementary Education
- Constance Winslow Kemp, Virginia  
Secondary Education
- Patricia Ann Kettle, New York  
Elementary Education
- Alan Lee Lengel, Virginia  
Secondary Education
- Diane Lerner, New Jersey  
Elementary Education
- Marsha G. Lerner, District of Columbia  
Elementary Education
- Barbara Lee Mansfield, Virginia  
Secondary Education
- Arlene Janet Mendelson, Virginia  
Elementary Education
- Harriet Irene Miller, New Jersey  
Secondary Education
- Sheila M. Miller, Nebraska  
Secondary Education
- Emily Mintz, New York  
Secondary Education
- Mary Anne Miyares, Virginia  
Secondary Education
- Richard Anthony Moock, Maryland  
Elementary Education
- Christine Mungello, District of  
Columbia  
Secondary Education
- Joan Evelyn Phillips, North Carolina  
Secondary Education
- Elyse Joan Rabin, New Jersey  
Secondary Education
- Ellen Joan Richter, New York  
Elementary Education
- Susan Pamela Roberts, Virginia  
Elementary Education
- Patricia Carol Robinson, Ohio  
Elementary Education
- Ilene Diane Rosner, New York  
Elementary Education
- Marilyn Susan Rubell, New York  
Elementary Education
- Joan Wallis Rubin, New York  
Elementary Education
- Elizabeth Harland Saage, Pennsylvania  
Secondary Education
- Pamela Maltry Schweickhardt, Virginia  
Elementary Education
- Donna Joy Seldes, Virginia  
Elementary Education
- Louise Susan Siegel, New York  
Elementary Education
- David G. Silberberg, New York  
Secondary Education
- Margaret Jane Strasburger, Maryland  
Elementary Education
- Patricia Ann Tattersall, Virginia  
Elementary Education
- Rita Mae Thompson, District of  
Columbia  
Secondary Education
- Cindy Freddi Throne, New Jersey  
Secondary Education
- Beverly Louise Updike, District of  
Columbia  
Secondary Education
- Rose Mary Vance, Maryland  
Elementary Education
- Anne Kneipple Warga, District of  
Columbia  
Elementary Education
- Carolynn Ann Washbon, Florida  
Secondary Education
- Katrina G. Weber, District of Columbia  
Elementary Education



Ruth Ellen Weinberg, New York  
Elementary Education

Roni Lynn Zuckerman, New York  
Elementary Education

#### BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

Louis D. Astolfi, Pennsylvania  
Rosemary Kay Baen, Texas  
Patricia Ann Bergan, Virginia  
George Thomas Bostic, Pennsylvania  
Robert Patrick Bowers, Virginia  
Lawrence Joseph Cignetti, Pennsylvania

Joseph Francis Lalli, Pennsylvania  
Michael John Locke, California  
Robert Murray Nugent, New York  
Robert Louis Paszek, Pennsylvania  
Pamela Jean Rainey, Maine

#### MASTER OF ARTS IN EDUCATION

Hartsel Dale Allen, West Virginia  
Secondary Education  
B.S. in Ed. 1939, West Virginia  
University  
Yayoi Kabe Arai, Japan  
History of Education  
A.B. 1961, Tokyo Woman's Christian  
College, Japan  
Owen W. Bailey, Virginia  
Adult Education  
A.B. 1948, Colby College  
on David Batchelor, Maryland  
Secondary Education  
B.S. 1959, U.S. Naval Academy  
Elizabeth Carroll Baxter, Texas  
Special Education  
B.S. in Ed. 1964, Texas Women's  
University  
Arthur Burton Bellman, Virginia  
Secondary Education  
B.S. in Aero.Engr. 1950, University  
of Colorado  
Constance T. Bernton, Maryland  
Adult Education  
A.B. 1948, Connecticut College  
Gene Wright Beverly, Virginia  
Elementary Education  
B.S. in P.E. 1965, The George  
Washington University  
Lawrence Drew Billups, District of  
Columbia  
School Administration  
B.S. in Ed. 1958, Winston-Salem State  
College  
Ann M. Bolane, District of Columbia  
Special Education  
A.B. 1965, Cornell University  
Paul Milton Brey, Jr., Maryland  
Secondary Education  
B.S. in P.E. 1954, Pennsylvania State  
College, West Chester  
Irma Lois Brodsky, Virginia  
Reading  
A.B. in Ed. 1959, The George  
Washington University

Sandra Carolyn Brooks, District of  
Columbia  
Elementary Education  
B.S. in Ed. 1962, D.C. Teachers  
College  
Joyce Ray Broome, District of Columbia  
Special Education  
B.S. in Ed. 1955, D.C. Teachers  
College  
William Adam Bruchey III, Maryland  
School Administration  
B.S. in Ed. 1962, Maryland State  
College, Frostburg  
Barbara Ann Burgess, Virginia  
Guidance  
A.B. 1949, University of Rhode Island  
Waldo Louis Carbonell, Virginia  
Guidance  
B.S. 1945, U.S. Military Academy  
Prudence Elizabeth Conover, Virginia  
Special Education  
A.B. in Ed. 1953, Oberlin College  
James Jimmy Cunningham, District of  
Columbia  
Guidance  
B.S. in Ed. 1964, Virginia State  
College  
Jane Carol Davis, Virginia  
Special Education  
A.B. in Ed. 1962, The George  
Washington University  
John Dewitt, Washington  
Special Education  
A.B. 1966, Calvin College  
Pauline Taube Diamond, Maryland  
Guidance  
A.B. 1940, Brooklyn College  
Frank Joseph Dunnigan, Maryland  
School Administration  
B.S. in Ed. 1959, Pennsylvania State  
College, Mansfield  
Donald Edwin Dworkin, Maryland  
Guidance  
B.S. in P.E. 1965, The George  
Washington University



- Warren Issac Early, Jr., Virginia  
Employee Development  
B.S. 1957, Madison College, Va.
- Eric William Erdosy, Virginia  
Special Education  
B.S. in P.E. 1963, College of William and Mary
- Robert David Evans, Virginia  
Adult Education  
A.B. in Ed. 1963, The George Washington University
- Edward A. Farrell, Jr., Virginia  
Secondary Education  
B.S. in P.E. 1965, The George Washington University
- Kayte Marsh Fearn, District of Columbia  
Special Education  
A.B. 1940, Knoxville College
- James Samuel Featherstone, Jr., District of Columbia  
School Administration  
B.S. in P.E. 1961, D.C. Teachers College
- Lourena R. Floyd, Maryland  
Guidance  
A.B. in Ed. 1954, Glenville State College
- Nancy Jane Goldblatt, New York  
Elementary Education  
A.B. 1963, Long Island University
- Judith Iris Goldenberg, Maryland  
Secondary Education  
A.B. 1962, Vassar College
- Arlene Kasper Gottlieb, Connecticut  
Guidance  
B.S. 1960, Boston University
- Carol Jean Gross, District of Columbia  
Special Education  
A.B. in Ed. 1960, Western State College of Colorado
- Robert Nelson Harvey, Virginia  
Physical Education  
B.S. in P.E. 1962, The George Washington University
- Thomas Henry Held, Maryland  
Secondary Education  
B.S. in Ed. 1961, D.C. Teachers College
- Louise See Henderson, Virginia  
School Administration  
A.B. in Ed. 1957, The George Washington University
- Carla R. Heymsfeld, District of Columbia  
Reading  
A.B. 1962, Brandeis University
- George Torbet Hilliker, Virginia  
Philosophy of Education  
B.S. 1963, Florida State University
- John Terrill Hohman, District of Columbia  
Student Personnel Work  
A.B. 1965, Culver-Stockton College
- Patricia Ann Holcomb, Virginia  
Special Education  
B.F.A. 1960, University of Oklahoma
- Julia Edmundson Holloway, District of Columbia  
Special Education  
B.S. in Ed. 1943, Winston-Salem State College
- Harriet K. Howard, Maryland  
Special Education  
A.B. 1942, Hunter College
- Daisy L. Johns, North Carolina  
Guidance  
A.B. 1949, Livingston College
- Irene Ward Jones, Virginia  
Guidance  
A.B. 1927, Rice University
- Martha Virlinda Joyner, Virginia  
School Administration  
B.S. in Ed. 1959, Longwood College
- James Patrick Kacsmarik, Virginia  
School Administration  
B.S. in P.E. 1962, The George Washington University
- George Wesley Kaseman, Virginia  
Special Education  
A.B. 1963, The George Washington University
- Georgia McDaniels Kelley, District of Columbia  
Guidance  
B.S. in Ed. 1948, D.C. Teachers College
- Anna R. Kogel, Virginia  
Special Education  
B.S. in Ed. 1965, Ohio State University
- Dale D. Kosich, New York  
School Administration  
B.S. in P.E. 1962, Wagner College
- William Westfall Lee, Jr., North Carolina  
Secondary Education  
B.S. 1948, U.S. Naval Academy
- B.S. in M.E. 1956, U.S. Naval Postgraduate School
- Eleanor Carlson Lind, Maryland  
Elementary Education  
B.S. in Ed. 1962, Central Connecticut State College
- John Roy Linn, Ohio  
Secondary Education  
B.S. in P.E. 1960, Bowling Green State University
- Michael Joseph MacInnes, California  
Adult Education  
A.B. 1939, St. Bonaventure University



- Curtis Naum Marsh, Jr., Pennsylvania  
Philosophy of Education  
B.S. 1934, University of Pennsylvania
- Mary Ellen McCann, Maryland  
Special Education  
B.S. in Ed. 1963, University of Cincinnati
- Alberta Clark McNeill, Maryland  
Elementary Education  
B.S. in Ed. 1958, Virginia State College
- Gail Carol McSweeney, Virginia  
Guidance  
B.S. in Ed. 1961, Madison College, Va.
- Charlotte Elizabeth Miles, Virginia  
Reading  
B.S. in Ed. 1957, University of Maryland
- Elizabeth Ann Mistrik, Pennsylvania  
Special Education  
B.S. in Ed. 1966, Duquesne University
- Claudia Pound Monane, Virginia  
Comparative Education  
B.S. 1957, Cornell University
- Fay Callaway Morrisson, Virginia  
School Administration  
A.B. in Ed. 1957, The George Washington University
- Joseph W. Mullan, Virginia  
Physical Education  
B.S. in P.E. 1966, The George Washington University
- Jeannette Murphy, Virginia  
Elementary Education  
A.B. 1963, The George Washington University
- Mary Angela Nau, Maryland  
Special Education  
A.B. in Ed. 1963, The George Washington University
- Wanda Anita Oates, District of Columbia  
School Administration  
B.S. in P.E. 1965, Howard University
- Joseph Andrew Phillips, District of Columbia  
School Administration  
B.S. in Ed. 1960, Virginia State College
- Edna Mae Pietruszak, Maryland  
Guidance  
B.S. in Ed. 1942, Pennsylvania State College, Bloomsburg
- William Roosevelt Pinkney, District of Columbia  
Secondary Education  
B.S. in P.E. 1961, Delaware State College
- Dorothy Mae Preston, Maryland  
Guidance  
B.S. 1951, Concord College
- Martin Joseph Ramunno, Virginia  
Secondary Education  
B.S. 1962, Fairleigh Dickinson University
- Edward Thorpe Reynolds, District of Columbia  
School Administration  
A.B. in Ed. 1959, The George Washington University
- Shelia Eleanor Robinson, District of Columbia  
School Administration  
B.S. in Ed. 1965, D.C. Teachers College
- Victor Eugene Rock, Jr., Maryland  
Employee Training  
B.S. in Ed. 1958, Pennsylvania State College, Shippensburg
- David Noel Sapp, Maryland  
Special Education  
B.S. in Ed. 1963, University of Maryland
- Edythe K. Schulkin, Maryland  
Student Personnel Work  
A.B. 1963, Mount St. Agnes College
- Robert Foster Shannon, Maryland  
Special Education  
B.S. 1955, University of Scranton
- Marian Cain Siler, District of Columbia  
Special Education  
B.S. in Ed. 1958, D.C. Teachers College
- Barbara Jane Slate, Virginia  
Guidance  
A.B. 1963, Madison College, Va.
- Wayne Nelson Smallwood, Maryland  
Guidance  
B.S. in P.E. 1963, The George Washington University
- Thomas Joseph Stoner, Pennsylvania  
Special Education  
B.S. in Ed. 1962, Mount St. Mary's College, Md.
- Virginia Marie St. Peter, New Jersey  
Employee Training  
A.B. 1947, New York University
- Nancy Lea Sublett, Virginia  
Guidance  
B.S. in Ed. 1957, Longwood College
- Mohammad Kamel Tageldin, United Arab Republic  
History of Education  
A.B. 1957, Al-Azhar University, United Arab Republic
- G.D.E. 1960, Faculty of Arabic Studies, United Arab Republic
- Mattie Hyde Thomas, Maryland  
Reading  
B.S. in Ed. 1950, Maryland State College, Salisbury



- Gloria Joan Tyler, District of Columbia  
Elementary Administration  
B.S. in Ed. 1964, Winston-Salem  
State College
- Frances Victoria Veney, Virginia  
Special Education  
B.S. in Ed. 1965, Virginia State  
College
- Mary Ann Watkins, Pennsylvania  
Secondary Education  
B.S. 1953, University of Pittsburgh
- Pearl S. Weiss, Maryland  
Guidance  
A.B. 1936, Hunter College
- Vera Mae White, District of Columbia  
School Administration  
A.B. 1955, Southern University and  
Agricultural and Mechanical College
- Arvin Samuel Williams, Virginia  
School Administration  
B.S. 1942, Milligan College
- Donald Erzinger Willman, Virginia  
Secondary Education  
B.S. 1936, U.S. Naval Academy
- Jeanne Johnson Wilson, District of  
Columbia  
School Administration  
B.S. in Ed. 1954, D.C. Teachers  
College
- Peggy Ann Wines, District of Columbia  
Guidance  
B.S. in Ed. 1959, D.C. Teachers  
College
- JoAnn Wingrove, Pennsylvania  
Special Education  
B.S. in Ed. 1965, Pennsylvania State  
College, California
- Arlene Novella Woodard, Maryland  
Elementary Education  
B.S. in Ed. 1954, Maryland State  
College, Bowie
- Jeanne Lee Worley, District of Columbia  
School Administration  
B.S. in Ed. 1963, D.C. Teachers  
College
- Winifred Frances Yonkers, District of  
Columbia  
Reading  
B.S. in Ed. 1961, University of  
Pittsburgh

## MASTER OF ARTS IN TEACHING

- Ellen Ehle Baritot, Maryland  
Elementary Education  
A.B. 1966, Goddard College
- Helen Walker Beals, Virginia  
Elementary Education  
B.S. 1952, Boston University
- Sharon Anne Beischer, Maryland  
Elementary Education  
A.B. 1965, Goucher College
- Anne Lee Boley, New York  
Elementary Education  
A.B. 1966, Goucher College
- Jane Brodsky, Virginia  
Elementary Education  
A.B. 1966, American University
- Lillian Anne Brown, Minnesota  
Elementary Education  
A.B. 1961, Wheaton College
- Barbara Anne Byrne, New York  
Elementary Education  
A.B. 1966, College of Wooster
- Minnie Lee Dyer, Texas  
Elementary Education  
A.B. 1965, Texas A&M University  
System, Prairie View
- Virginia Lynn Friedley, District of  
Columbia  
Elementary Education  
A.B. 1966, Houghton College
- Sylvia Ruth Garvin, Maryland  
Elementary Education  
A.B. 1956, The George Washington  
University
- Virginia Godfrey, Maryland  
Elementary Education  
A.B. 1965, University of Maryland
- Joan Janet Hoexter, New York  
Elementary Education  
A.B. 1966, Carnegie Institute of  
Technology
- Marsha Geraldine Katz, Maryland  
Elementary Education  
A.B. 1966, Marietta College
- Mary I. Klebe, Pennsylvania  
Elementary Education  
A.B. 1966, Denison University
- Fradel Kramer, District of Columbia  
Elementary Education  
A.B. 1948, Syracuse University
- Margaret McAlpine Ladd, Virginia  
Elementary Education  
A.B. 1946, Hood College
- Virginia Cecil Leighton, Virginia  
Elementary Education  
A.B. 1951, The George Washington  
University



- Holley M. Linn, Maryland  
Elementary Education  
A.B. 1956, Duke University
- Pamela Ann Majkowski, New York  
Elementary Education  
B.S. 1966, Cornell University
- Barbara Joan Maly, District of Columbia  
Elementary Education  
A.B. 1964, Hood College
- Carol Susan Miller, Virginia  
Elementary Education  
B.S. 1965, University of New Hampshire
- Judith Ann Noble, Maryland  
Elementary Education  
A.B. 1966, Goucher College
- Ellen M. Pechman, Maryland  
Elementary Education  
B.S. 1966, University of Wisconsin
- Deborah Noble Pelton, Massachusetts  
Elementary Education  
A.B. 1966, Wells College
- Virginia R. Reid, District of Columbia  
Elementary Education  
A.B. 1940, Bethany College
- Jane Katherine Schoonover, Connecticut  
Elementary Education  
A.B. 1966, The George Washington University
- Nancy P. Scibelli, Virginia  
Elementary Education  
A.B. 1955, Regis College
- Beth Inez Spiegelberg, Maryland  
Elementary Education  
A.B. 1966, Bethany College
- E. Karen Gerber Tersoff, District of Columbia  
Elementary Education  
A.B. 1949, University of Michigan
- Susan Miriam Tracy, Virginia  
Elementary Education  
A.B. 1966, Manhattanville College of the Sacred Heart
- Carol Linda Williams, Maryland  
Elementary Education  
A.B. 1966, Heidelberg College

#### ADVANCED PROFESSIONAL CERTIFICATE

- Marilyn Tyler Brown, District of Columbia  
Administration  
A.B. in Ed. 1957, Virginia Union University  
A.M. in Ed. 1961, The George Washington University
- George Foster Daniels, Virginia  
Guidance  
A.B. 1954, Washington College  
A.M. 1961, The George Washington University

#### EDUCATION SPECIALIST

- Dorothy Thrasher Duncan, District of Columbia  
Special Education  
B.S. in Ed. 1944, D.C. Teachers College  
Ed.M. 1958, Harvard University
- Brady Jones Fletcher, District of Columbia  
Guidance and Counseling  
A.B. 1950, Clark College  
A.M. in Ed. 1953, Howard University
- Ruthadele L. Hauch, Virginia  
Guidance  
A.B. 1935, University of Iowa  
A.M. 1939, University of Chicago
- Vivian Fitandes Overton, District of Columbia  
Special Education  
B.S. in Ed. 1941, Madison College, Va.  
A.M. 1945, Gallaudet College

#### DOCTOR OF EDUCATION

- John Charles Bish, Maryland  
Teacher Education  
Dissertation: *A Study of Teachers' Attitudes Toward Selected Technological Media of Instruction and an Examination of Salient Variables Related to these Attitudes*  
A.B. in Ed. 1960, A.M. in Ed. 1963, The George Washington University



- Roy Irving Brooks, Texas  
 Secondary Administration  
 Dissertation: *An Investigation of Selected Effects of a 1966 Summer School Program for Deprived Seventh and Eighth Grade Students in Fairfax County, Virginia*  
 B.S. 1948, Texas A&M University  
 Ed.M. 1955, Boston University
- LeRoy Robert Fullerton, New Jersey  
 Administration and Supervision  
 Dissertation: *An Analysis of the Army Officer Student*  
 B.S. in Ed. 1935, University of Alabama  
 Ed.M. 1937, Rutgers, the State University
- Alvin Carl Jensen, Wisconsin  
 Employee Training  
 Dissertation: *Industrial Policies and Practices in the Employment of Retired Military Personnel*  
 Ed.B. 1958, Wisconsin State University  
 A.M. in Ed. 1960, The George Washington University
- Michael Hyle Jessup, Maryland  
 Adult Education  
 Dissertation: *An Historical Analysis of the Development of Selected Areas of University Extension Programs in the United States, 1900-1965, as Related in Professional Literature*  
 A.B. in Ed. 1961, A.M. in Ed. 1963, The George Washington University
- Jack Barker Kussmaul, Maryland  
 Administration and Supervision  
 Dissertation: *The Professional Needs of New Secondary Teachers of Carroll, Frederick, and Howard Counties, Maryland*  
 B.S. in P.E. 1947, A.M. in Elementary Administration 1948, Columbia University
- Marie Lapin Petrenko, Maryland  
 Curriculum  
 Dissertation: *The Daily Newspaper in an Elementary School Language Arts Program: A Report of a Four-year Action Research Project*  
 Mus.B. 1933, Syracuse University  
 A.M. in Ed. 1961, The George Washington University
- Henry Augustus Renz III, Virginia  
 Administration  
 Dissertation: *An Examination of the Effect of System Reorganization on de facto Segregation in Arlington County, Virginia*  
 A.B. in Ed. 1954, A.M. in Ed. 1957, The George Washington University
- Eric Foster Rhodes, Virginia  
 Administration and Supervision  
 Dissertation: *A Master Plan for Establishing Community Colleges in Virginia*  
 A.B. in Ed. 1950, A.M. in Ed. 1952, The George Washington University
- Salvatore J. Rinaldi, Maryland  
 Administration and Supervision  
 Dissertation: *New Horizons for Providing Educational Facilities for the Future*  
 Ed.B. 1951, University of Miami  
 A.M. in Ed. 1961, A.P.C. 1965, The George Washington University
- Melvin Lee Self, Texas  
 Teacher Education  
 Dissertation: *The Certification of Teachers: The Policies and Activities of the National Commission on Teacher Education and Professional Standards from 1946 to 1966*  
 B.S. in Ed. 1945, Ed.M. 1951, North Texas State University



- Louis Harold Strehlow, Colorado  
Administration  
Dissertation: *History of the Army Educational Development Program: Origin, Purpose, Significance, and Implications*  
Ed.B. 1935, Milwaukee State Teachers College  
A.M. in Ed. 1961, The George Washington University
- Charles Edward Tressler, Maryland  
Teacher Education  
Dissertation: *An Appraisal of the Hood College Junior Aide Program and the Pre-student-teaching Experiences in the Approved Teacher Education Programs in Maryland*  
B.S. 1948, Pennsylvania State College, Millersville  
A.M. 1949, New York University

#### SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION

Student Marshal: Jack Ronald Starr

#### BACHELOR OF BUSINESS ADMINISTRATION

- |  |  |
|--|--|
| Richard James Ballard, Ohio<br>Business Administration                                     | William Michael Griffith, Maryland<br>Business Administration                                    |
| Justin Edward Beals, Maryland<br>Accounting (with distinction, special honors)             | Wallace Roy Johnston, Virginia<br>Business Administration  |
| Stephen Bernstein, New Jersey<br>Business Administration                                   | William Braun Jones, Jr., Virginia<br>Business Administration (with distinction, special honors) |
| Barbara Claire Blumberg, New York<br>Business Administration                               | Alan Philip Kassan, New York<br>Accounting   |
| Melvin Terrell Bruce, Virginia<br>Business Administration                                  | Alexander Morrison Keddle,<br>Pennsylvania<br>Business Administration                            |
| Pamela Todd Burchett, Virginia<br>Business Administration                                  | Kadiatou Koita, District of Columbia<br>Business Administration                                  |
| Mitchel Gordon Cahn, New York<br>Accounting  | Robert Harvey Kravetz, New Jersey<br>Business Administration                                     |
| Charles Allen Clark, Virginia<br>Business Administration                                   | John McCrea Leggette, Virginia<br>Business Administration  |
| William Sinclair Corish, Virginia<br>Business Administration                               | Norman Lewis Lesser, New Jersey<br>Accounting  |
| Lawrence Henry Corn, Jr., Virginia<br>Business Administration                              | Murray David Levy, Maryland<br>Accounting  |
| Stanley James Coroneos, District of Columbia<br>Business Administration                    | Herbert Joseph Millard, Massachusetts<br>Business Administration                                 |
| Claudia Jean Dillahunt, District of Columbia<br>Business Administration                    | Thomas William Morgan III, Virginia<br>Accounting  |
| Richard Gordon Ellis, New York<br>Accounting   | Donald Paul Neenan, Maryland<br>Business Administration  |
| Roldan Fernandez, Virginia<br>Accounting (special honors)                                  | Frederick Henry Nolke, Jr., Virginia<br>Business Administration                                  |
| Harold Leon Gailey, Virginia<br>Business Administration (with distinction, special honors) | Francis Edward Osborne, New York<br>Business Administration                                      |
| Harold Ralph Glidden, Virginia<br>Business Administration                                  | Jon Richard Peterson, Alaska<br>Accounting   |
|  | Margaret Susan Reusch, New York<br>Business Administration                                       |



- Paul Nicholas Romani, New Jersey  
Business Administration
- Louis Joseph Rubino, Jr., District of Columbia  
Accounting
- Diane Gail Schulte, Maryland  
Business Administration
- Lary Allen Scollick, Pennsylvania  
Business Administration
- Doreen Arthenia Shaddix, Maryland  
Business Administration
- Matthew Peter Sosnowski, Illinois  
Business Administration
- Jack Ronald Starr, District of Columbia  
Business Administration (with distinction, special honors)
- Gary Allen Terrill, Virginia  
Accounting
- Malcolm Spenker Todt, New Jersey  
Accounting
- Walter Leonard Vandivere, Virginia  
Accounting
- Richard Vincent, Maryland  
Business Administration
- Verlon Kenneth Vrana, Virginia  
Business Administration (special honors)
- Marion A. Yee, Maryland  
Business Administration

## MASTER OF ARTS IN GOVERNMENT

- John E. Bouchard, Maryland  
Personnel Administration  
A.B. 1961, University of Maine
- Joel Roger Hedetniemi, Virginia  
Public Administration  
B.B.A. 1962, The George Washington University
- Jo Ellen Jennette, District of Columbia  
Public Administration  
A.B. 1964, Mary Baldwin College
- Donald Wright Johnson, Virginia  
Personnel Administration  
B.S. 1958, U.S. Military Academy
- John Thomas Kimbrough, Jr., District of Columbia  
Public Administration  
A.B. 1958, Davidson College
- James Lefter, Maryland  
Public Administration  
B.S. in C.E. 1951, University of Maryland
- Richard Carson Libby, Washington  
Public Administration  
A.B. 1965, Western Washington State College
- James Patrick O'Hair, New York  
Public Administration  
A.B. 1963, Willamette University

## MASTER OF BUSINESS ADMINISTRATION

- Norman Grier Allan, Virginia  
Health Care Administration  
B.S. 1965, University of Utah
- Rafael Alvarez, Massachusetts  
Business Administration  
Law Degree 1959, Universidad de Villanueva, Cuba
- Matthew Edward Anglim, Jr., New York  
Business Administration  
B.S. 1954, U.S. Naval Academy
- George Nicholas Backus, New Jersey  
Business Administration  
B.S. 1951, City College, New York
- William Charles Baer, Maryland  
Health Care Administration  
A.B. 1963, Goshen College
- Dewey Loyd Baggett, Texas  
Health Care Administration  
A.B. 1957, University of Texas
- William John Bakula, Jr., Missouri  
Business Administration  
B.S. 1959, St. Louis University
- Larry Leroy Batch, Indiana  
Health Care Administration  
A.B. 1962, Evansville College
- David Alexander Baxter, Washington  
Business Administration  
A.B. 1952, Washington State University
- William James Beer, Ohio  
Business Administration  
B.S. 1959, Temple University
- George Wallace Belsey III, Illinois  
Health Care Administration  
A.B. 1961, DePauw University
- John Isaac Blanck, Maryland  
Business Administration  
B.S. 1964, Pennsylvania State University
- John Lawrence Blum, Pennsylvania  
Business Administration  
A.B. 1964, Muhlenberg College
- Cletus William Bodart, Wisconsin  
Business Administration  
B.S. 1954, University of Wisconsin



- William Nelson Borg, Maryland  
Health Care Administration  
B.S. 1947, Syracuse University
- Thomas Arthur Boyce, Florida  
Business Administration  
B.S. 1951, U.S. Naval Academy
- Harold Jack Brennecke, Texas  
Business Administration  
B.C.E. 1953, Clemson University
- Charles William Brown, Ohio  
Business Administration  
B.S. in Agri. 1958, Ohio State University
- Charles Wilson Brown III, Alabama  
Health Care Administration  
B.B.A. 1964, University of Georgia
- Louis Kenneth Bruyneel, West Virginia  
Business Administration  
B.S. 1951, West Virginia University
- Serge Frank Cagnolari, France  
Business Administration  
Diplome 1966, Institut Catholique de Paris, France
- William Ryves Casparis, Virginia  
Business Administration  
B.S. in F.S. 1964, Georgetown University
- Lynn William Casselberry, Virginia  
Business Administration  
B.S. 1954, University of Colorado
- Raymond Lester Champ, Texas  
Health Care Administration  
A.B. 1964, Michigan State University
- Alain Narie Chanlat, France  
Business Administration  
Diplome 1966, Institut Catholique de Paris, France
- Alan Barry Clark, Virginia  
Health Care Administration  
B.S. in B.A. 1959, Montana State University
- Lawrence Alan Cohen, New York  
Health Care Administration  
A.B. 1964, Moravian College
- Lyle Phillips Creadick, New York  
Business Administration  
B.S. 1960, State University of New York at Oswego
- Francis Joseph Cronin, Jr., New Jersey  
Health Care Administration  
A.B. 1962, Georgetown University
- Charles Lauren Culp, California  
Health Care Administration  
A.B. 1963, University of California, Los Angeles
- William Daniel Davis, Maryland  
Business Administration  
B.S. 1950, U.S. Military Academy
- Robert Vernon Dean, Arizona  
Business Administration  
A.B. 1953, San Jose State College
- Loren E. Decker, Illinois  
Business Administration  
B.S. in Ed. 1951, Ed.M. 1952, University of Illinois
- Richard John Donzell, Virginia  
Business Administration  
B.S. 1953, DePaul University
- Carlos deLeon Esguerra, Philippines  
Business Administration  
B.S. in B.A. 1962, University of the Philippines
- William Robert Fails, Ohio  
Business Administration  
A.B. 1954, Hiram College
- Carl Joseph Felling, Missouri  
Health Care Administration  
A.B. 1964, Westminster College
- Thomas Joseph Fitzpatrick, Jr., Virginia  
Business Administration  
B.S. 1959, Pennsylvania State University
- David Albert Fletcher, Pennsylvania  
Health Care Administration  
A.B. 1963, University of North Carolina
- Robert Eugene Flolid, Minnesota  
Business Administration  
A.B. 1951, St. Cloud State College
- William Dent Foreman, Ohio  
Health Care Administration  
B.S. in B.A. 1960, Kent State University
- Otto John Fuka, Jr., Illinois  
Business Administration  
B.S. 1954, U.S. Naval Academy
- William Edgar Gaydon, Colorado  
Business Administration  
B.S. in Agri. 1958, Colorado State University
- Edward George George, Colorado  
Health Care Administration  
B.S. 1965, University of Maryland
- Ivor Karl Goodrich, Washington  
Business Administration  
B.S. 1955, Washington State University
- Michael Jameson Gott, Virginia  
Business Administration  
B.S. in Mil.Sci. 1958, University of Maryland
- M.S. 1966, Utah State University of Agriculture and Applied Science
- Ronald Keith Grimm, New York  
Business Administration  
B.S. 1963, University of Illinois
- David Louis Harlow, New Jersey  
Business Administration  
B.S. 1960, U.S. Naval Postgraduate School
- Charles Alwin Hawkins, Illinois  
Business Administration  
A.B. 1954, Valparaiso University



- Thomas Vivian Helwig, Michigan  
Business Administration  
A.B. 1964, Cambridge University,  
England
- Sister Mary Leonie Hofer, Minnesota  
Health Care Administration  
A.B. 1963, College of St. Scholastica
- James Jackson Horn, North Carolina  
Health Care Administration  
B.S. 1961, University of North  
Carolina
- George Richard Houston, Jr., District  
of Columbia  
Business Administration  
B.S. in B.A. 1961, Georgetown  
University
- Thomas Opie Hughes, Virginia  
Business Administration  
A.B. 1964, Roanoke College
- Charles Scott Iobe, Florida  
Health Care Administration  
B.B.A. 1964, Texas Christian  
University
- Blair Ireland, Connecticut  
Business Administration  
B.S. 1954, U.S. Naval Academy  
B.S. in E.E. 1961, U.S. Naval  
Postgraduate School
- Millard Jerry Johnson, Kentucky  
Business Administration  
B.S. 1953, Berea College
- Treuman Phillip Katz, California  
Health Care Administration  
B.S. 1964, University of California
- Paul Frederick King, Jr., Wisconsin  
Health Care Administration  
B.S. 1965, University of Wisconsin
- John Glendon Kistler, Texas  
Health Care Administration  
B.S. in B.A. 1961, University of  
Arkansas
- Daniel Noble Klinck, District of  
Columbia  
Business Administration  
B.S. 1955, The Citadel
- Wayne James Kutz, Ohio  
Health Care Administration  
A.B. 1962, Ohio Wesleyan University
- Robert Leonard Langlois, Massachusetts  
Health Care Administration  
B.S. 1962, Boston College
- Stanley Grant Leftwich, Virginia  
Business Administration  
A.B. 1959, University of North  
Carolina
- Jerry Allen Levine, Maryland  
Health Care Administration  
B.S. 1960, DePaul University
- Wesley Allen Lokken, Minnesota  
Business Administration  
A.B. 1960, Concordia College
- John Michael Mancano, Connecticut  
Health Care Administration  
A.B. 1960, University of Connecticut
- Raffaele Marzella, New Jersey  
Health Care Administration  
A.B. 1958, New York University
- Gerald Joseph McHugh, New Jersey  
Health Care Administration  
B.G.E. 1962, Municipal University  
of Omaha
- Oscar Medlin, Jr., Texas  
Business Administration  
B.S. 1950, Texas A&M University
- David Harris Mendelow, New York  
Health Care Administration  
B.S. 1963, Michigan State University
- Maurice Bernard Michelson, Maryland  
Business Administration  
A.B. 1956, B.S. in E.E. 1957,  
Columbia University
- Stanley Tallmadge Moak, New York  
Business Administration  
B.S. 1946, U.S. Naval Academy
- Jehangir Mobed, Florida  
Health Care Administration  
B.S. 1949, Tufts University
- Berton David Moldow, Maryland  
Business Administration  
B.E.E. 1954, City College, New York
- Paul Edmund Moss, Rhode Island  
Health Care Administration  
B.S. in B.A. 1965, Bryant College
- Denny Franklin Murray, Virginia  
Business Administration  
B.S. 1953, Colorado State University
- Robert Elliott Nelson, New Jersey  
Health Care Administration  
B.S. 1958, South Dakota State  
University
- Robert Theodore Nelson, Ohio  
Business Administration  
B.S. 1958, U.S. Coast Guard Academy
- Ronald Edward Nelson, California  
Business Administration  
A.B. 1953, University of Washington
- Jacob Milner Nevo, Israel  
Business Administration  
William Talman Newell, Jr., Virginia  
Health Care Administration  
B.S. 1954, Cornell University
- Bae Keun Oh, Republic of Korea  
Business Administration  
A.B. 1961, Chung-Gu College, Korea
- Jo Ann Olsen, Nebraska  
Health Care Administration  
A.B. 1951, Municipal University of  
Omaha



- Edward Ronald Oscarson, Florida  
Business Administration  
B.S. 1954, U.S. Naval Academy  
B.C.E. 1958, Rensselaer Polytechnic Institute
- Clarence Arthur Patterson, Maryland  
Business Administration  
B.S. 1962, University of Maryland
- Norman Donald Peifer, Maryland  
Health Care Administration  
A.B. 1962, Goshen College
- Richard Thurman Penn, Jr., Alabama  
Business Administration  
B.S. 1949, U.S. Coast Guard Academy
- Edward F. Kondoh Pesima, Sierra Leone  
Business Administration  
B.S. 1965, Hampton Institute
- Sister Mary Ronalda Reilly, Maryland  
Health Care Administration  
B.S. in Nursing 1949, St. Mary's College, Ind.
- William Herbert Riordan, New York  
Business Administration  
B.B.A. 1954, Iona College
- Harry Ernest Robson, Virginia  
Business Administration  
B.S. 1953, U.S. Naval Academy
- Thomas Michael Ryan, District of Columbia  
Business Administration  
B.B.A. 1965, Idaho State University
- Mitsuo Sakayeda, California  
Business Administration  
B.S. 1953, University of California, Los Angeles
- Thomas Patrick Schaefer, New Jersey  
Business Administration  
B.S. 1956, U.S. Coast Guard Academy
- Neil Michael Schwartzstein, New Jersey  
Health Care Administration  
A.B. 1963, Lafayette College
- Owen Robert Shaffner, Wisconsin  
Health Care Administration  
B.S. in Phar. 1962, University of Illinois
- David Jerome Sheehy, New Jersey  
Health Care Administration  
B.S. 1964, Ohio State University
- Mark Ronald Shenkman, Connecticut  
Business Administration  
A.B. 1965, University of Connecticut
- George Edward Shepard, Jr., North Carolina  
Business Administration  
B.S. 1964, University of North Carolina
- Robert Alton Shiver, Texas  
Business Administration  
B.S. 1964, University of Maryland
- Jerome Simonoff, District of Columbia  
Business Administration  
B.E.E. 1959, City College, New York  
M.S.E. 1963, The George Washington University
- Benjamin Earl Snead, Ohio  
Health Care Administration  
B.S. in B.A. 1964, West Virginia University
- John Warren Speer, Tennessee  
Business Administration  
B.S. 1954, Macalester College
- Cary Dale Stephenson, Oklahoma  
Business Administration  
B.S. 1952, Oklahoma State University of Agriculture and Applied Science
- Patrick Francis Sweeney, Massachusetts  
Business Administration  
A.B. 1943, College of the Holy Cross
- William Harris Taft, New Jersey  
Health Care Administration  
A.B. 1961, Alfred University
- Peter Wilson Teitelman, Illinois  
Health Care Administration  
B.B.A. 1965, University of Michigan
- Frederic LeRoy Tolleson, Texas  
Business Administration  
B.S. 1955, U.S. Naval Academy
- Eugene Dayton Troxell, Virginia  
Business Administration  
B.S. 1965, Fairleigh Dickinson University
- John Stanley Vishneski, Pennsylvania  
Business Administration  
B.S. 1952, University of Scranton
- James William Walls, Texas  
Health Care Administration  
B.S. 1961, Austin College
- William Henry Walters, Virginia  
Business Administration  
B.S. in B.A. 1964, Richmond Professional Institute
- David Andy Woods, Jr., Texas  
Business Administration  
B.S. in Ed. 1949, North Texas State University
- Marshall Stewart Yablon, New York  
Health Care Administration  
A.B. 1963, New York University
- Paul Melvin Yaeger, New York  
Health Care Administration  
B.S. 1964, American University
- Robert Rocky Zappacosta, District of Columbia  
Health Care Administration  
A.B. 1963, Fairmont State College
- Robert Kenneth Zentmyer, Michigan  
Health Care Administration  
A.B. 1965, The George Washington University



## MASTER OF PUBLIC ADMINISTRATION

- |  |  |
|--|--|
| James Austin Brady, Massachusetts<br>Public Administration<br>A.B. 1949, Western State College<br>of Colorado<br>M.B.A. 1950, University of Denver | Earl Paul Mink, Maryland<br>Public Administration<br>B.S. 1954, University of Maryland               |
| Herman William Ernst, Maryland<br>Public Administration<br>B.E.E. 1939, Brooklyn Polytechnic<br>Institute  | Mary Elizabeth Probst, New Jersey<br>Public Administration<br>A.B. 1960, San Francisco State College |

## DOCTOR OF PUBLIC ADMINISTRATION

- Frank Virden, District of Columbia  
Public Administration  
Dissertation: *Management Information Systems in Central American Regional Organizations*  
B.S. 1927, U.S. Naval Academy  
A.M. in I.A. 1964, The George Washington University

## SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS

Student Marshal: William Capers Warren

## BACHELOR OF ARTS

- |  |   |
|--|---|
| Marc Stanley Barthello, Jr., Maryland<br>International Affairs         | M'Lou Gilbert, Maryland<br>International Affairs            |
| Marietta Eileen Bernot, Virginia<br>International Affairs              | Victoria Ann Goff, California<br>International Affairs      |
| Howard Alan Brenner, Massachusetts<br>International Affairs            | Richard Alan Grande, Florida<br>International Affairs       |
| John Lawrence Caldera, New York<br>International Affairs               | Ronald Mark Greenberg, Virginia<br>International Affairs    |
| James Louis Calio, Delaware<br>Public Affairs                          | William Robert Hamann, New York<br>Public Affairs           |
| Lynne Thomson Carrier, Ohio<br>International Affairs                   | Thomas Roger Hammant, New York<br>International Affairs     |
| Gwen Lee Cavanagh, Maryland<br>International Affairs                   | Edward Wesley Hughes, California<br>International Affairs   |
| Susan Jennings Coman, District of<br>Columbia<br>International Affairs | Marlise Ann James, New Jersey<br>International Affairs      |
| Timothy Lee Conner, Virginia<br>International Affairs                  | Robert Harry Jonas, New York<br>International Affairs       |
| Thomas Alexander Cseh, Virginia<br>International Affairs               | Kathleen Gail Kochiss, Connecticut<br>International Affairs |
| Richard Shaw Dirksen, Maryland<br>International Affairs                | Stephanie Sue Krupar, Montana<br>International Affairs      |
| David Robertshaw Essig, Virginia<br>Public Affairs                     | Gwenifer Livingstone Law, Uruguay<br>International Affairs  |
| Andrea Gail Foth, Wisconsin<br>International Affairs                   | Robert Michael Lester, New York<br>International Affairs    |



- Douglas Earl Macherey, Texas  
International Affairs
- Doris Margaret Matlyak, Connecticut  
International Affairs
- William Merriman McLin, Maryland  
Public Affairs
- David Douglas McNary, Illinois  
International Affairs
- David Alexander Melesco, Virginia  
Public Affairs
- Francis Tibor Miko, District of  
Columbia  
International Affairs
- Richard Ostheimer II, Pennsylvania  
International Affairs
- Elaine Barbara Ostock, New Jersey  
Public Affairs
- William Perry Pendley, Wyoming  
Public Affairs
- Jane Hille Porter, Florida  
International Affairs
- Margaret Joan Price, District of  
Columbia  
International Affairs
- Renee Harriet Rivkis, Pennsylvania  
International Affairs
- Thomas Michael Rogers, Arizona  
Public Affairs
- Lorraine Helen Schmidt, Pennsylvania  
International Affairs
- Toba Rose Seltzer, Maryland  
International Affairs
- Patricia Harper Sherrard, District of  
Columbia  
International Affairs
- Robert David Slewett, Florida  
Public Affairs
- Donna Jeanne Sprinkle, Virginia  
International Affairs
- David Robert Summerall, Virginia  
International Affairs
- Claudia Lee Talbott, California  
Public Affairs
- James Wilson Tavel, Maryland  
Public Affairs
- Gail Ann Van Keulen, Michigan  
Public Affairs
- William Capers Warren, Georgia  
International Affairs
- William Leslie Peter Watrous, District  
of Columbia  
Public Affairs
- Carolyn Troy Welch, Connecticut  
International Affairs
- Peter Gordon Woodward, Maryland  
International Affairs

## MASTER OF ARTS

- William Harold Bowker, Louisiana  
International Affairs  
A.B. 1965, Centenary College
- James Allen Brown, Virginia  
International Affairs  
A.B. 1965, Knox College
- Roderic Ai Camp, California  
International Affairs  
A.B. 1966, The George Washington  
University
- Gary Eugene Chafin, Texas  
International Affairs  
A.B. 1965, Baylor University
- Jerome Taylor Cherry, Virginia  
International Affairs  
A.B. 1965, Randolph-Macon College
- James Brian Corey, District of Columbia  
International Affairs  
A.B. 1965, Michigan State University
- Donald Lewis McMillen II, Colorado  
International Affairs  
A.B. 1960, College of Idaho
- Johnston Muthiora, Kenya  
International Affairs  
A.B. in Govt. 1966, The George  
Washington University
- Jerry Mack Newman, Virginia  
International Affairs  
A.B. in Govt. 1961, The George  
Washington University
- Lisa Alice Pickens, Alabama  
International Affairs  
A.B. 1964, Florence State College
- James Frederick Ransone, Jr., Virginia  
International Affairs  
B.S. 1954, U.S. Military Academy  
M.S.E. 1959, Princeton University
- Edward Florens Rivinus, Maryland  
International Affairs  
A.B. 1937, Princeton University



## COLLEGE OF GENERAL STUDIES

Student Marshal: Richard Lee Hatch

## ASSOCIATE IN ARTS

Kenneth Louis Dragon, Virginia  
AccountingElla Constance Hamilton, Maryland  
(with distinction)

## BACHELOR OF ARTS

John Marshall Altmeyer, Ohio  
Social Sciences  
Elizabeth Ann Anderson, Virginia  
Natural Sciences  
John Wilson Bartol, Hawaii  
Social Sciences  
Dorsey Causer Baynham, Virginia  
Social Sciences  
Floyd Edward Bennett, California  
Social Sciences  
Eugene Ralph Brady, Virginia  
Social Sciences  
Gene Moore Brawner, Tennessee  
Social Sciences  
Ian Fraser Brown, Massachusetts  
Social Sciences  
John Howard Buchanan, Florida  
Social Sciences  
Ashley Corley, Jr., District of Columbia  
Social Sciences  
Marguerite Virginia Dallas, Virginia  
Social Sciences  
William Peter Davis, Maryland  
Social Sciences  
Boyd Kay Dorsey, Virginia  
Social Sciences  
Harry Richard Dressler, Maryland  
Natural Sciences  
Sylvester Peter Dudzik, Maryland  
Social Sciences  
Bradford Mayo Dyer, Virginia  
Social Sciences  
Mary Rutledge Eldredge, Virginia  
Natural Sciences  
Robert Harrington Erbe, Illinois  
Social Sciences  
Richard Scott Garvey, California  
Social Sciences  
John Robert Gouldman, Indiana  
Social Sciences  
Joseph Lane Graves, Maryland  
Social Sciences

William Edward Hassenger, Minnesota  
Social Sciences  
Richard Lee Hatch, California  
Social Sciences (with distinction)  
Leo Joseph LeBlanc, Jr., New York  
Social Sciences  
Francis Harold Lescault, Florida  
Social Sciences  
George Mortimer Lunsford, Florida  
Social Sciences  
Alfred Marks, Virginia  
Social Sciences  
Norman James Neiss, Illinois  
Social Sciences  
Fred Morton Nevitt, Jr., California  
Social Sciences  
Michael O'Hopp, Michigan  
Social Sciences  
Harry Peck, Maryland  
Social Sciences  
Stella Petrovic, Pennsylvania  
Natural Sciences  
Cecil James Phillips, Maryland  
Social Sciences  
Arthur Robert Rath, Florida  
Social Sciences  
Donald Eugene Reeves, New Hampshire  
Social Sciences  
Albert Monroe Sackett, Virginia  
Social Sciences  
Leslie Jacob Schaffner, Texas  
Social Sciences  
George Albert Scott, Virginia  
Social Sciences  
Robert Allen Sutton, New Jersey  
Social Sciences  
Eugene Thomas Taylor, Ohio  
Social Sciences  
James Wink, Pennsylvania  
Social Sciences  
Allen Oliver Woods, Michigan  
Social Sciences



## BACHELOR OF BUSINESS ADMINISTRATION

William Lewis Fox, Pennsylvania  
Elizabeth A. Mullen, Virginia

George William Ramsey, Washington

## BACHELOR OF SCIENCE IN GENERAL STUDIES

Wess Presley Chambers, Arizona  
M. Vance Dawkins, Jr., Pennsylvania  
William Bennett Middlemas, Florida  
Billie Calvin Spell, Georgia

Bobby Lee Stephens, Maryland  
B.S. 1962, Jackson College, Hawaii  
Bailey Eugene Weems, Tennessee

BACHELOR OF SCIENCE IN GEODETIC AND  
CARTOGRAPHIC SCIENCE

John Joseph Oleksak, Maryland

## MASTER OF ARTS

William Andrew Brown, Florida  
Personnel Administration  
B.S. in Mil.Sci. 1960, University of  
Maryland  
Richard Dille Campbell, West Virginia  
Personnel Administration  
B.S. 1946, U.S. Naval Academy  
Morton Darwin, District of Columbia  
Financial Management  
B.S. 1958, University of Maryland  
Edwin Robert Evans, Virginia  
Governmental Administration  
A.B. 1942, Washington University  
Richard Waldemar Habersat, Maryland  
Personnel Administration  
B.S. in Ed. 1939, State University  
of New York at Albany

Benjamin Edwin Johnson, Jr., Minnesota  
Personnel Administration  
B.B.A. 1939, University of Minnesota  
Donald Eugene Mackin, Maryland  
Personnel Administration  
B.S. 1947, Miami University  
Robert Harold Wesloh, Maryland  
Governmental Administration  
A.B. 1959, St. Cloud State College  
Paul Patton Winkel, Jr., Virginia  
Personnel Administration  
B.S. 1956, U.S. Military Academy  
Peter Randolph Zana, Maryland  
Financial Management  
B.S. 1953, University of Southern  
California

## MASTER OF ARTS IN INTERNATIONAL AFFAIRS

James Dean Berry, Texas  
B.S. in Mil.Sci. 1959, University of  
Maryland  
Joseph Francis Donelan, Jr., New York  
B.S. in B.A. 1947, Georgetown  
University  
Thomas John Dunnigan, Ohio  
A.B. 1943, John Carroll University  
John Eric Olson, Virginia  
B.S. 1939, U.S. Military Academy

John Francis Refo, Virginia  
B.S. 1940, U.S. Naval Academy  
M.S. 1947, Massachusetts Institute  
of Technology  
Jules Maynard Rouse, Ohio  
A.B. 1940, University of California,  
Los Angeles  
LL.B. 1955, The George Washington  
University

## MASTER OF SCIENCE IN INTERNATIONAL AFFAIRS

Richard Ward Bates, Virginia  
B.S. 1948, U.S. Naval Academy  
William Ackerman Buell, Jr., Rhode  
Island  
A.B. 1950, Princeton University

Allie Willis Callan, Jr., Arkansas  
B.S. 1965, University of Maryland  
Winfred Gibson Carter, Texas  
B. of Forestry 1953, Stephen F. Austin  
State College



Waymond D. Clark, Texas  
 A.B. 1964, University of Maryland  
 Harrison Tyler Combs, Hawaii  
 LL.B. 1950, American University  
 William Mathew Crooks, Washington  
 A.B. 1949, University of Washington  
 Donald Temple Eller, Delaware  
 B.S. 1929, U.S. Naval Academy  
 Clyde Preston Evely, Virginia  
 B.S. in Mil.Sci. 1955, University of Maryland  
 William Arthur Fall, Alabama  
 A.B. 1955, Williams College  
 Shepler Ward FitzGerald, Jr., Hawaii  
 B.S. 1939, U.S. Military Academy  
 William Morris Arl Greene, Virginia  
 B.S. 1943, East Carolina College  
 Merle Charles Hansen, Wisconsin  
 Ph.B. 1951, Marquette University  
 Richard Sides Hartline, Virginia  
 B.S. 1945, U.S. Military Academy  
 M.S. in C.E. 1950, Massachusetts Institute of Technology  
 Josiah Henson, Oklahoma  
 B.S. 1944, U.S. Naval Academy  
 Ernest Edward Hollyfield, Jr., California  
 B.S. 1943, U.S. Naval Academy  
 Francis Leroy Kuhn, Kansas  
 B.B.A. 1955, University of Michigan

Henry James Lyon, Pennsylvania  
 B.S. 1965, U.S. Merchant Marine Academy  
 Carroll Beverly Markel, Rhode Island  
 A.B. 1962, University of Maryland  
 William McGowan Matthew, South Carolina  
 B.S. 1947, U.S. Naval Academy  
 Robert Roy McAnaw, New Jersey  
 B.S. 1950, University of Santa Clara  
 Henry Stuart Palau, Connecticut  
 A.B. 1950, Trinity College, Conn.  
 LL.B. 1953, Boston University  
 John Frederick Paul, Illinois  
 A.B. 1940, Cornell College, Iowa  
 Lewis Carl Rice, Virginia  
 A.B. 1965, San Francisco State College  
 William Kenneth Rogers, Wyoming  
 B.S. in Mil.Sci. 1959, University of Maryland  
 Walter Carl Terry, Minnesota  
 B.S. in Mil.Sci. 1966, University of Maryland  
 William James White, Kentucky  
 B.S. in Mil.Sci. 1959, University of Maryland

#### MASTER OF BUSINESS ADMINISTRATION

Arnold Webb Braswell, Louisiana  
 B.S. 1948, U.S. Military Academy

Harold Joseph Margulis, Maryland  
 A.B. 1962, University of Maryland

#### MASTER OF SCIENCE IN BUSINESS ADMINISTRATION

Robert Thomas Boyette, California  
 A.B. 1951, University of North Carolina  
 James Arthur Cochrane, Virginia  
 B.S. 1963, College of William and Mary  
 Donald Andrew DuBois, Pennsylvania  
 B.S. 1957, Bucknell University  
 Charles Craig Greenwald, Massachusetts  
 B.S. 1961, University of Nebraska  
 Harold Arthur Hayes, Jr., Virginia  
 B.S. 1941, Indiana University  
 George Arthur Irvin, Indiana  
 B.S. 1953, Purdue University  
 Fred Wilson Jacks, Jr., Virginia  
 A.B. 1961, Wichita State University  
 A.M. in I.A. 1963, The George Washington University

Hugh Robinson Jones, Virginia  
 B. of Engr. 1959, Youngstown University  
 George Ward Keever, Pennsylvania  
 B.S. in Com. 1964, Drexel Institute of Technology  
 Charles Franklin Pilley, Jr., Virginia  
 B.S. 1955, Virginia Military Institute  
 M. of E.E. 1964, University of Oklahoma  
 Robert Huff Russell, Virginia  
 B.S. 1952, Arizona State University  
 Alan Durant West, Jr., Pennsylvania  
 B.S. 1963, Lehigh University

#### MASTER OF SCIENCE IN FINANCIAL MANAGEMENT

Nicholas Lefteris Angelos, West Virginia  
 B.S. in Ind.Mgt. 1963, Massachusetts Institute of Technology

Allen Ernest Bender, Maryland  
 A.B. 1964, The George Washington University



William Morris Brulle, Maryland  
 B.S. 1932, Johns Hopkins University  
 George Francis Carey, Florida  
 B.S. in Mil.Sci. 1955, University of Maryland  
 Vincent Robert Cucina, Maryland  
 B.S. 1958, Loyola College  
 Albert Guy Dancy, Sr., Virginia  
 B.S. 1944, U.S. Military Academy  
 M.S. 1947, University of Iowa  
 Charles Daniel, Arizona  
 B.S. 1943, University of California, Berkeley  
 Henry Bernard Dorshow, Maryland  
 B.S. 1959, U.S. Military Academy  
 Carroll Winford Files, Maryland  
 B.S. 1958, University of Baltimore

Earl Donald Henck, Maryland  
 B.S. in E.E. 1953, Purdue University  
 Richard Anthony Jones, Maryland  
 B.S. 1959, Loyola College  
 Raymond Joseph Kopser, Virginia  
 A.B. 1962, Villa Madonna College  
 Rupert Walker Legare, Jr., South Carolina  
 A.B. 1965, The George Washington University  
 Donald Paul Ostlund, Oregon  
 B.S. 1963, San Diego State College  
 William Otto Rettig, Michigan  
 B.S. 1964, Colorado State University  
 Dean Robert Rindy, Washington  
 A.B. 1948, University of Minnesota  
 Edward Robert Slack, Maryland  
 B.S. 1965, Johns Hopkins University

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B.S. 1956, University of Idaho
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| Robert Emmett Sullivan, New York<br>B.S. 1936, Syracuse University                           | William George Vogel, Jr., Maryland<br>B.S. 1964, University of Baltimore |
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| Lewis Herman Thames, Texas<br>B.S. 1960, U.S. Naval Academy                                  | Kent Jules Weber, Florida<br>B.S. 1946, U.S. Naval Academy                |

#### MASTER OF PUBLIC ADMINISTRATION

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A.B. 1950, Birmingham-Southern College

#### MASTER OF SCIENCE IN PUBLIC ADMINISTRATION

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## Honorary Degrees

WINTER CONVOCATION, FEBRUARY 22, 1967

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Walter George Ross

### DOCTOR OF PUBLIC SERVICE

Charles Brenton Huggins

ANNUAL COMMENCEMENT, JUNE 4, 1967

### DOCTOR OF LAWS

Edward William Brooke

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- Colorado Wolcott Scholar:* Ronald Powers, A.B.
- Florida Wolcott Scholar:* George Walser, A.B.
- Iowa Wolcott Scholar:* Joel S. Wight, A.B.
- Michigan Wolcott Scholars:* Robert Borosage, A.B.; James Corey, A.B.; Michael Harrison, A.B., LL.B.
- New Jersey Wolcott Scholar:* Alan J. Darke, A.B.

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- Law School Trustee Scholarships:* J. Gordon Arbuckle, A.B.; Warner F. Brundage, Jr., A.B.; Paul W. Chemnick, A.B.; John M. Cleary, A.B.; Richard O. Cunningham, A.B.; Joseph H. Dettmar, A.B.; Douglas R. Earle, A.B.; John S. Ebel, B.S.; Leslie G. Fleet, A.B.; Joseph C. Fleming, Jr., B.S.; Ilona E. Freedman, A.B.; John R. Gates, A.B.; Mary J. Gaw, A.B.; Gary Glaser, A.B.; John C. Gray, A.B.; David K. Grayson, A.B.; Richard A. Hampe, A.B.; Stuart A. Heller, B.Ch.E.; Donald C. Homes, Jr., B.S.; Donald B. Hordes, A.B.; Robert S. Hurlinghorst, A.B.; Gerald B. Kagan, A.B.; Michael Kimmel, A.B.; Stephen W. Kraus, B.S.; Marshall E. Kresman, B.S.; Marshall H. Lichtenstein, A.B.; Ivan I. Light, A.B.; Marlin R. McCaleb, A.B.; Peter D. Olexy, B.S.; Louis I. Parley, A.B.; Robert J. Patton, Jr., A.B.; James P. Perry, B.S.; Donald D. Price, B.S.; Neil E. Roberts, B.S. in E.E.; Steven L. Ross, A.B.; Howard P. Roy, A.B.; Richard A. Seitz, A.B.; Linda R. Singer, A.B.; Arthur D. Smith, B.S.; Robert N. Solomon, B.S.; Thomas V. Vakerics, A.B.; Robert R. Vawter, Jr., A.B.; Charles S. Walsh, B.S.
- Lederle Laboratories Scholarship:* Paul H. D'Amato, A.B.; Kenneth J. Forman, A.B.; Victor P. Wasilauskas, Jr., B.S.
- Medical Alumni Scholarship Fund:* Kenneth A. Fisher, B.S.; Brian C. Holober, A.B.; Roger C. Husted, B.S.; Bertram S. Liebross, B.S.
- Eugene and Agnes E. Meyer Scholarships:* Judy A. Elliston, Paul M. Fine, John W. Harris, Benjamin L. Hawkins, Susan M. McKenzie
- A. Morehouse Scholarship:* William P. Johnson
- National Multiple Sclerosis Society Scholarship:* Charles J. Bier, A.B.
- Helen Marie and Thomas E. Orr Scholarships:* Judith C. Chirlin, Leslie M. Feuille, Yvonne C. Greenfield
- Charles Pfizer Medical Scholarship Program:* Dennis A. Wight
- Phi Delta Gamma Scholarship:* Jeanette Koch, A.B.
- Gerald Pollin Scholarship:* Stephen H. Frye, A.B.
- Linda Joy Pollin Scholarship:* Leah L. Fontaine, A.B.
- Levin M. Powell Scholarship:* Robert L. Johnson
- School of Engineering and Applied Science Scholarships:* Jacob Azreal, Michael Behen, Sandra Berkowitz, John T. Cavanaugh, Lee A. Danisch, Joseph Ebner, Kenneth G. Foote, Jan E. Friedlander, William A. Herman, Kenneth Hum, Paul B. Johnson, Robert J. Keltie, Gregory Lawson, William A. Lemeschewsky, Douglas Lowe, Edward R. Murray, Michael W. Rohrer, Perry J. Saidman
- School of Medicine Scholarships:* Jules R. Altas, A.B.; Joseph M. Andrus, B.S.; David E. Ascarelli, B.S.; Barbara J. Azlant, B.S.; John A. Balacki, B.S.; Heide Billes, B.S.; Robert W. Bonar, B.S.; Ronald C. Burton, B.S.; Andrew A. Ceavatta, Jr., A.B.; James W. Delameter, A.B.; Howard B. Dickler, A.B.; George G. Edwards, Jr., A.B.; John R. Emmett, B.S.; Dennis J. Feen, B.S.; Robert M. Fine, A.B.; Kenneth A. Fisher, B.S.; Leah L. Fontaine, A.B.; Peter C. Freis, Jr., B.S.; Stephen H. Frye, A.B.; Robert J. Gerety, A.M.; Ernest R. Gerfin, A.B.; Jay S. Goldberg, A.B.; Kathryn K. Guyton, B.S.; Ronald L. Hansing; S. Paul Herndon IV, B.S.; Barbara R. Hoart, A.B.; John C. Hoefs, A.B.; Brian C. Holober, A.B.; Rogert C. Husted, B.S.; Taylor A. Jeppson, A.B.; Norman B. Jetton, A.B.; Mary M. Kass, A.B.; John J. Katona, B.S.; Charles G. Kevorkian, A.B.; Irwin H. Koff, A.B.; Rodney B. Kovick; Ronald B. Lamb, B.S.; Richard A. Lewis, A.B.; Bertram S. Liebross, B.S.; John E. Liljenquist, B.S.; Frances J. Lipman, A.B.; Allan W. Lohaus, A.B.; Alice M. Martinson, A.B.; Barbara M. Meyers, A.B.; Paul D. Miller, A.B.; Paul R. Mitchell, A.B.; Thomas E. Moeser, A.B.; Warren F. Muth, A.B.; Fred G. Odere, B.S.; Alan J. Oram, B.S.; Robert C. Osborne, A.B.; Philip Paul, A.B.; Alfred G. Peters, A.B.; Burton L. Redd, Richard M. Rytting, B.S.; Anita K. Schnur; Gabriel F. Sciallis, A.B.; James W. Smith, B.S.; Arthur J. Sober, A.B.; Joan S. Steinkuller, A.B.; Patrick J. Sullivan; Michael E. Sussman, A.B.; Jean M. Thorne, B.S. in Phar.; Richard L. Ward, B.S.; Victor P. Wasilauskas, Jr., B.S.; Richard M. Whalen, B.S.; Robert M. White, A.B.; Dennis A. Wight; John D. Wojcik, B.S.; Craig D. Woodard, A.B.



*Lula M. Shepard Scholarships:* Frank D. Buchholz, Katrina G. Weber  
*Alfred P. Sloan Foundation Scholarship:* Talmadge D. Cooper III, A.B.  
*Special Program in Elementary Teacher Education:* Ellen E. Baritot, A.B.; Helen W. Beals, B.S.; Anne L. Boley, A.B.; Nellie C. Bradford, B.S.; Jane Brodsky, A.B.; Lillian A. Brown, A.B.; Minnie L. Dyer, A.B.; Virginia L. Friedley, A.B.; Sylvia R. Garvin, A.B.; Virginia Godfrey, A.B.; Marsha G. Katz, A.B.; Mary I. Klebe, A.B.; Fradel Kramer, A.B.; Margaret M. Ladd, A.B.; Virginia C. Leighton, A.B.; Holley M. Linn, A.B.; Pamela A. Majkowski, B.S.; Barbara J. Maly, A.B.; Carol S. Miller, B.S.; Angela A. Obermeier, A.B.; Deborah N. Pelton, A.B.; Virginia R. Reid, A.B.; Nancy P. Scibelli, A.B.; Beth I. Spiegelberg, A.B.; E. Karen G. Tersoff, A.B.; Susan M. Tracy, A.B.  
*David Spencer Scholarship:* Richard Raymond  
*David Perry Steinman Memorial Scholarship Fund:* Irwin H. Koff, A.B.  
*Mary Lowell Stone Scholarship:* Anita J. Barnes  
*Charles Clinton Swisher Scholarships:* John W. Rowland, Janice S. Snow  
*Tau Kappa Epsilon Scholarship:* John W. Rowland  
*Tulare County Scholarship:* Alfred G. Peters  
*Union Methodist Church Scholarship:* Simeon N. Bateman III, James C. Scopeletis  
*University Hospital Scholarships in Medical Technology:* Sharon Kyle, Cheryl A. Landrum, Wanda O'Rear, Veronica Pugh, Chung J. Smith  
*William Walker Scholarship:* William P. Johnson  
*Abigail Ann Brown White and Henry Kirk White Scholarship Fund:* Victor Chamandy, Edythe S. Danick, Susan Goldstein, Benjamin L. Hawkins, Jr.  
*John Withington Scholarship:* Samuel C. Swaby  
*Women's Physical Education Alumnae Association Scholarship:* Beatrice Harkleroad  
*Zonta Club Scholarship:* Candace M. Carroll

## PRIZES

*Alpha Chi Sigma Freshman Awards in Chemistry:* John Richard Bacon, Loren Scott Funt, Karen Marshall Kelley  
*Alpha Chi Sigma Senior Award in Chemistry:* Donald Richard Hanscom  
*Alpha Delta Pi Award in scholarship and leadership:* Karla Anne Leibowitz  
*Alpha Kappa Psi Award in Commerce:* Jack Ronald Starr  
*American Institute of Chemists Award in Chemistry:* Donald Richard Hanscom  
*American Security and Trust Company Award to a graduating senior in the National Law Center for excellent work in Estate Planning:* John Philip Meyerholz  
*Norman B. Ames Memorial Award in Engineering and Applied Science:* Douglas William Lowe  
*Byrne Thurtell Burns Memorial Award in Organic Chemistry:* Karen Joy Skinner  
*Wilbur J. Carr Award to that student in the graduating class who has demonstrated outstanding ability in the study of international affairs and who has given evidence of possessing in marked degree the qualities which produce the good citizen and the dedicated public servant:* Edward Wesley Hughes  
*Chemical Rubber Company Award in Physics:* Robert Alan Blunar  
*Chi Omega Award in Social Sciences:* Anne Sherry Rothman  
*Columbian Women Award to the graduating senior woman who in her undergraduate life has most nearly fulfilled the objectives of Columbian Women:* Nancy Joan Skon  
*John Henry Cowles Awards in Government:* Jack Ronald Starr (School of Government and Business Administration), Robert Michael Lester (School of Public and International Affairs)  
*E. K. Cutter Award in English:* Thomas Spaulding Willard  
*Andy Davis Award for the Promotion of School Spirit:* Robert Richard DeTore, Elizabeth Lee Meehan  
*Isaac Davis Awards in Public Speaking:* First Prize, Justin Edward Beals; Second Prize, Randy Richard Ross; Third Prize, Allen Roger Snyder  
*Delta Gamma Award for scholarship, extracurricular activities, and service to the University:* Diana Sue Blackmon



- Delta Zeta Award in Biology: John Richard Bacon
- Henry Grattan Doyle Memorial Award to an outstanding senior student for excellence in Spanish: Jill Helen Kleinman
- Jesse Frederick Essary Award to that student who has given promise of sound citizenship and ability in "forthright reporting": Billie Alice Stablein
- Joshua Evans III Memorial Award to that man in the graduating class who has demonstrated his signal ability in good citizenship: Barry Roger Schenof
- Willie E. Fitch Memorial Award in Chemistry: Donald Richard Hanscom
- Allie S. Freed Award to that member of the graduating class in the School of Medicine who has demonstrated exceptional proficiency in the field of Preventive Medicine: Robert Allen Liss
- Walter Freeman Award to a student in the graduating class in the School of Medicine who submits the best essay based on original investigation: Robert Allen Liss
- Charles Glover Award to that student in the National Law Center who has attained the highest average grade in the third-year, full-time course: Neil Eugene Roberts
- Alice Douglas Goddard Award in American Literature: Linda Anne Herzog
- Edward Carrington Goddard Award in French: June Crawford Humbert
- Morgan Richardson Goddard Award in Commerce: Jack Ronald Starr
- Hamilton Watch Award in Engineering: Paul Barron Johnson
- Alec Horwitz Award to the senior in the School of Medicine who has demonstrated exceptional proficiency in the field of Surgery: Alice Marie Martinson
- Gardiner G. Hubbard Memorial Award in United States History: Richard Barrett Dressner, Richard Arnold Harrison
- Kappa Kappa Gamma Award in Biology: Evelyn Charlotte Huwyler
- John Bell Lerner Award to that member of the graduating class of the National Law Center who attains the highest average grade in the entire course for the degree of Bachelor of Laws: Neil Eugene Roberts
- Huron W. Lawson Award in Obstetrics and Gynecology: Terry Paul Clemmer
- Lawyers Title Award for excellence in the law of real property: Neil Eugene Roberts
- Craig Sterling Logan Memorial Award to the outstanding freshman man: David Allen Nadler
- Martin Mahler Award in Materials Testing: Peter Montague Austin
- Benjamin Manchester Award to a member of the graduating class of the School of Medicine who has an outstanding record and shows promise of real humanitarianism in the practice of medicine: Mary Musselman Kass
- Mortar Board Award to the woman student in the Sophomore Class having a scholastic standing of B or higher and the most outstanding record in activities: Michele Nancy Cohen
- Julius S. Neviaser Award in Orthopedic Surgery: Alice Marie Martinson
- Old Men Award to a man in the Junior Class who has made outstanding contributions to student activities: Larry Wayne Self
- Omicron Delta Kappa Award to that member of the Senior Class who, throughout his course, has done the most constructive work in student activities: Richard Arnold Harrison
- Order of Scarlet Award to that member of the Sophomore Class who has the most outstanding record in extracurricular activities and service to the University: Stephen Ridgeway Remsberg
- John Ordronaux Award to that member of the graduating class of the School of Medicine with the highest scholastic standing: Robert Allen Liss
- Phi Eta Sigma Award to the beginning male student attaining the highest scholastic average in his first full semester of work: Jay Roy Kraemer, David Michael Roseman
- Pi Beta Phi Award to that member of the Senior Class who, throughout her course, has done the most to promote student activities: Marietta Eileen Bernot
- Pi Lambda Theta Award in Teacher Education: Theresa Anne Gray
- Psi Chi Awards in Psychology: Victor Chamandy (Undergraduate), Routh Nash Coffman (Graduate)
- Ruggles Award in Mathematics: Randy Richard Ross



*Dr. William G. Schafhirt Award to a senior student in the School of Medicine for the best original essay or thesis on some medical subject of current public interest:* Stanley Gary Morrison

*Hermann and Johanna Richter Schoenfeld Award to a member of the graduating class for excellence in the historical and cultural phases of German studies:* Helga Monica Havelka

*School of Engineering and Applied Science Distinguished Scholar to the senior who graduates with the highest standing:* Robert William Albert Ayre

*Sigma Kappa Award in Chemistry:* Karen Marshall Kelley

*Staughton Award in Latin:* Margaret Lee Backenheimer

*James MacBride Sterrett, Jr., Award in Physics:* Richard Gary Epstein

*Charles Clinton Swisher Historical Club Award in Medieval History:* Anna Marie Pullan

*United States Law Week Award to an outstanding senior student in the National Law*

*Center:* Sara-Ann Determan

*Alexander Wilbourne Weddell Award for an essay on World Peace:* Lynne Thomson Carrier



## ALUMNI AND ALLIED ASSOCIATIONS

### THE GENERAL ALUMNI ASSOCIATION

The objectives of this association are to unite the graduates who wish to associate themselves for charitable, educational, literary, and scientific purposes, and to promote the general welfare of the University.

Eligible members are those who have matriculated in any school of the University and who have left the University in good standing, or any person who is or has been a member of the teaching, research, or administrative staff of the University or of the Board of Trustees of the University. Active members are those eligible members who are current contributors (dues or otherwise) to or life members of The George Washington University General Alumni Association, the Alumni Association of any school of the University, or contributors to the Annual Support Program.

The Alumni Office is in Bacon Hall, 2000 H Street, N.W., Washington, D.C. 20006.

All alumni are urged to keep the Alumni Office informed of changes of address or occupation and to supply information with regard to their fellow alumni.

### RECIPIENTS OF ALUMNI ACHIEVEMENT AWARDS

JUNE 4, 1967

Leon Jacobs, A.M. 1938, Ph.D. 1947

Robert Morris Page, A.M. 1933

Cynthia Clark Wedel, Ph.D. 1957

### RECIPIENTS OF ALUMNI SERVICE AWARDS

JUNE 2, 1967

Joel Barlow, LL.B. 1935

Reginald D. Barta, A.B. 1958, A.M. 1965

Mary Margaret Davis, A.B. 1937, A.M. 1941

J. Frank Doubleday, A.M. 1955

Sergius Gambal, A.B. in Govt. 1952

Thaddeus A. Lindner, A.B. in Govt. 1951

Howard E. Tickin, A.B. 1950, M.D. 1954

Harold Maxwell Young, A.B. 1926

### GOVERNING BOARD

1967-68

*President.*—L. Jackson Embrey, A.B. 1937, LL.B., LL.M. 1949; 6013 5th Road N., Arlington, Va.

*Vice President.*—J. Dallas Shirley, B.S. in P.E. 1936, A.M. in Ed. 1945; 1200 N. Nash Street, Arlington, Va.

*Treasurer.*—Reginald D. Barta, A.B. 1958, A.M. 1965; 7623 Mendota Place, Springfield, Va.

*Secretary.*—Lyn Henderson Clark, A.B. 1954; 9810 Summit Avenue, Kensington, Md.



*Columbian College of Arts and Sciences:*

- Alice K. Andersen, A.B. 1941; 4441 Lowell Street, N.W., Washington, D.C.  
 Lyn Henderson Clark, A.B. 1954; 9810 Summit Avenue, Kensington, Md.  
 Harold E. Mesriow, A.B. 1954, LL.B. 1957; 1625 K Street, N.W., Washington, D.C.

*Graduate School of Arts and Sciences:*

- Victor H. Cohn, Ph.D. 1961; 3932 Prospect Street, Kensington, Md.  
 Helen M. Dyer, M.S. 1929, Ph.D. 1935; 3024 Tilden Street, N.W., Washington, D.C.  
 Mary A. Holman, A.B. 1955, A.M. 1957, Ph.D. 1963; 940 Spring Hill Road, McLean, Va.

*School of Medicine:*

- Frederick Y. Donn, Jr., M.D. 1941; 3339 Stuyvesant Place, N.W., Washington, D.C.  
 Howard E. Ticktin, A.B. 1950, M.D. 1954; D.C. General Hospital, Washington, D.C.

*National Law Center:*

- L. Jackson Embrey, A.B. 1937, LL.B., LL.M. 1949; 6013 5th Road N., Arlington, Va.  
 Dayton M. Harrington, LL.B. 1942; 454 Washington Building, Washington, D.C.  
 Samuel J. L'Hommedieu, Jr., LL.B. 1951, LL.M. 1952; 1627 K Street, N.W., Washington, D.C.

*School of Engineering and Applied Science:*

- William J. Ellenberger, B.S. in E.E. 1930, B.S. in M.E. 1934; 6419 Barnaby Street, N.W., Washington, D.C.  
 Delmer C. Ports, B.S. in E.E. (w.d.) 1937; 7909 Birnam Wood Drive, McLean, Va.  
 Stephen R. Woodzell, B.S. in E.E. 1933; 4427 25th Street N., Arlington, Va.

*School of Education:*

- Dorothy L. Johnson, A.M. in Ed. 1945; 2539 34th Street, S.E., Washington, D.C.  
 Howard O. Johnson, A.M. in Ed. 1948, Ed.D. 1950; 3014 Woodlawn, Falls Church, Va.  
 J. Dallas Shirley, B.S. in P.E. 1936, A.M. in Ed. 1945; 1200 N. Nash Street, Arlington, Va.

*School of Government and Business Administration:*

- William Belford, A.B. in Govt. 1960; 1016 N. Livingston Street, Arlington, Va.  
 Thaddeus A. Lindner, A.B. in Govt. 1951; 2140 Pennsylvania Avenue, N.W., Washington, D.C.

*School of Public and International Affairs:*

- William Belford, A.B. in Govt. 1960; 1016 N. Livingston Street, Arlington, Va.  
 Thaddeus A. Lindner, A.B. in Govt. 1951; 2140 Pennsylvania Avenue, N.W., Washington, D.C.

*College of General Studies:*

- Reginald D. Barta, A.B. 1958, A.M. 1965; 7623 Mendota Place, Springfield, Va.  
 J. Frank Doubleday, A.M. 1955; 404 N. Kenmore Street, Arlington, Va.  
 Geraldine Werner, A.B. 1948; 7418 Holly Avenue, Takoma Park, Md.

*Faculty:*

- John G. Allee, Jr., A.B. in Ed. 1939, A.M. 1940; 3726 Ingomar Street, N.W., Washington, D.C.  
 Robert M. Riggs, A.B. 1955; 4755 Berkeley Terrace, N.W., Washington, D.C.

*At Large (appointed):*

- Abiah A. Church, A.B. 1948, LL.B. 1950; 658 N.E. 74th Street, Miami, Fla.  
 Donald W. Cole, M.B.A. 1957; 323 North Elton, Birmingham, Mich.  
 Julius P. Filcik, LL.B. 1959; 1162 Hollywood, Cincinnati, Ohio  
 Jasper T. Hiers, LL.B. 1950; 1349 Coosaw, Charleston, S.C.  
 Joseph L. Koach, A.B. 1949; 219 Woodland, Highland Park, Ill.  
 Angelo M. May, M.D. 1937; 450 Sutter Street, San Francisco, Calif.  
 Philbrick McCoy, LL.B. 1922, LL.M. 1923, LL.D. 1957; Judge, Superior Court, Los Angeles, Calif.  
 Vernon Romney, LL.B. 1922; 404 Kearns Building, Salt Lake City, Utah  
 T. Arthur Smith, A.B. in Govt. 1949, A.M. in I.A. 1962; 1609 Simmons Court, McLean, Va.  
 Hugh S. Wertz, B.S. in E.E. 1929, LL.B. 1935; Western Electric Company, 195 Broadway, New York, N.Y.  
 Harold M. Young, A.B. 1926; 3711 Dartmouth Street, Dallas, Texas



### THE GEORGE WASHINGTON UNIVERSITY MEDICAL ALUMNI ASSOCIATION

The George Washington University Medical Alumni Association, incorporated in 1959, continues the organization previously known as The George Washington University Medical Society.

The stated purposes of the Association are as follows: "This shall be a nonprofit organization international in scope, whose objectives shall be to provide constructive services for the alumni of The George Washington University School of Medicine, for furthering the art and science of medicine, research, and for the promotion of the welfare of The George Washington University School of Medicine, its students, The George Washington University Hospital and its trainees."

Active membership in the Association consists of: all graduates of the School of Medicine; current members and, on application, past members of the teaching staff of the School of Medicine who hold Doctor's degrees; Doctors of Medicine who have had one or more years of postgraduate training in The George Washington University Hospital. Junior membership consists of all members of the student body of the School of Medicine during the time they are students.

The Medical Alumni Association maintains an office in the School of Medicine at 1331 H Street, N.W., Washington, D.C.

### OFFICERS OF THE ASSOCIATION FOR THE YEAR 1967-68

*President.*—Jerome H. Epstein, A.M. 1948, M.D. 1953; 2141 K Street, N.W., Washington, D.C.

*President Elect.*—William Brainin, A.B. 1931, M.D. 1934; 6124 Central Avenue, Capitol Heights, Md.

*First Vice President.*—James A. Dusbabek, M.D. 1934; 916 19th Street, N.W., Washington, D.C.

*Second Vice President.*—Jack B. Kleh, A.B. 1942, M.D. 1944; 1915 19th Street, N.W., Washington, D.C.

*Secretary.*—Charles E. Smith, A.B. 1939, M.D. 1941; St. Elizabeths Hospital, Washington, D.C.

*Treasurer.*—Jerome W. Canter, M.D. 1955; 1722 Eye Street, N.W., Washington, D.C.

#### *Executive Council:*

Frederick Y. Donn, Jr., M.D. 1941, 3339 Stuyvesant Place, N.W., Washington, D.C.

Ernest A. Gould, M.D. 1939; 1302 18th Street, N.W., Washington, D.C.

Richard E. Palmer, A.B., M.D. 1944; 312 S. Washington Street, Alexandria, Va.

George Speck, M.D. 1941; 4801 Kenmore Avenue, Alexandria, Va.

Thomas A. Wilson, A.B. 1942, M.D. 1944; 730 24th Street, N.W., Washington, D.C.

Allan Zellis, M.D. 1941; 730 24th Street, N.W., Washington, D.C.

### THE GEORGE WASHINGTON LAW ASSOCIATION

The George Washington Law Association was founded in 1912 and has been affiliated with the General Alumni Association since 1926. Its purposes as stated in the constitution are to promote high standards of legal education, to keep the alumni of the school in close touch with one another, especially with members of their own classes, to gather and publish at intervals information as to the whereabouts and activities of these alumni, and to further the interests of the school.

Eligible members are those who have matriculated in the school or National University and have left in good standing, and any member or former member of the faculty of the school. Active members are those eligible members who are current contributors to the Law Annual Support program of the University and life members of the George Washington Law Association.

The Association plans publication periodically of the Law Alumni Directory. Law Alumni are urged to keep the Alumni Office informed of their whereabouts so that directory information can be kept up to date.



The Law Alumni Office is in Bacon Hall, 2000 H Street, N.W., Washington, D.C. 20006.

#### OFFICERS OF THE ASSOCIATION FOR THE YEAR 1967-68

- President*.—Glen A. Wilkinson, J.D. 1938; 1616 H Street, N.W., Washington, D.C.  
*First Vice President*.—Oliver Gasch, LL.B. 1932; U.S. Court House, Washington, D.C.  
*Second Vice President*.—Joseph L. Brand, J.D. 1963; 1200 17th Street, N.W., Washington, D.C.  
*Third Vice President*.—Philip F. Herrick, LL.B. 1933, LL.M. 1936; Shoreham Building, Washington, D.C.  
*Secretary*.—Clarence T. Kipps, Jr., J.D. 1953; 1700 Pennsylvania Avenue, N.W., Washington, D.C.  
*Treasurer*.—Alexander L. Stevas, A.B. 1949, LL.B. 1951; 1970 Rockingham Street, McLean, Va.  
*Executive Committee*:  
 Joel Barlow, LL.B. 1935; Union Trust Building, Washington, D.C.  
 Michael P. Bentzen, LL.B. 1964; Union Trust Building, Washington, D.C.  
 Henry A. Berliner, Jr., LL.B. 1964; 1100 Connecticut Avenue, N.W., Washington, D.C.  
 Alvin Capp, A.B. 1961, LL.B. 1964; 500 Northeast 3d Avenue, Fort Lauderdale, Fla.  
 Fred H. Daly, LL.B. 1966; 2866 S. Buchanan Street, Arlington, Va.  
 Joseph A. DeGrandi, M.S. 1950, LL.B. 1952; 1815 H Street, N.W., Washington, D.C.  
 Joseph A. DePaul, LL.B. 1950; 7100 Baltimore Avenue, College Park, Md.  
 Lloyd Fletcher, J.D. 1939; 4851 Maury Lane, Alexandria, Va.  
 Elizabeth S. Freret, LL.B. 1950; 1 Farragut Square South, Washington, D.C.  
 Harold L. George, LL.B. (Nat'l) 1920; 719 N. Oakhurst Drive, Beverly Hills, Calif.  
 Philip A. Gragan, A.B. 1953, J.D. 1959; 2401 H Street, N.W., Washington, D.C.  
 Marion Edwyn Harrison, LL.B. 1954, LL.M. 1959; 1750 Pennsylvania Avenue, N.W., Washington, D.C.  
 William S. Hochman, J.D. 1962; Pillsbury, Madison & Sutro, 225 Bush Street, San Francisco, Calif.  
 C. Timothy Hopkins, LL.B. 1963; Idaho First National Bank Building, Idaho Falls, Idaho  
 Joseph D. Hughes, LL.B. 1934; 525 William Penn Place, Pittsburgh, Pa.  
 Ronald E. Madsen, Sr., J.D. 1955; Southern Building, Washington, D.C.  
 Milton E. Mermelstein, A.B. 1930, LL.B. 1931; 445 Park Avenue, New York, N.Y.  
 Katsugo Miho, LL.B. 1953; 195 S. King Street, Honolulu, Hawaii  
 Milan C. Miskovsky, LL.B. 1956; Department of the Treasury, 15th and Pennsylvania Avenue, N.W., Washington, D.C.  
 Donald L. Mooers, LL.B. 1963; 1921 Eye Street, N.W., Washington, D.C.  
 Bernard I. Nordlinger, A.B. 1929, LL.B. 1933; Southern Building, Washington, D.C.  
 Kenneth W. Parkinson, A.B. 1950, LL.B. 1952; Tower Building, Washington, D.C.  
 Nad A. Peterson, A.B. 1950, J.D. 1953; The Flour Corp., Ltd., 2500 S. Atlantic Boulevard, Los Angeles, Calif.  
 Bernarr R. Pravel, J.D. 1951; 500 Jefferson Building, Houston, Texas  
 Gordon J. Quist, J.D. 1962; 465 Old Kent Building, Grand Rapids, Mich.  
 James Robertson, LL.B. 1965; 5222 Roosevelt Street, Bethesda, Md.  
 Ethan Stroud, LL.M. 1956; 1401 Main Street, Dallas, Texas  
 Sidney Struble, LL.B. 1917 (Nat'l), LL.M. 1919 (Nat'l); 553 7th Street, Brooklyn, N.Y.  
 Betty Ann Thompson, A.B. 1946, LL.B. 1948; 2045 15th Street N., Arlington, Va.  
 William C. Thornton, LL.B. 1961; 227 Hill Street, Reno, Nev.  
 Kirby L. Turnage, Jr., J.D. 1964; 434 Trust Company of Georgia Building, Atlanta, Ga.  
 Sterry R. Waterman, Law (1926); 12 Highland Avenue, St. Johnsbury, Vt.  
 George F. Wilsey, J.D. 1958; 275 4th Street N., St. Petersburg, Fla.  
 James O. Wright, LL.B. 1938; P.O. Box 1966, Detroit, Mich.  
 Samuel J. L'Hommedieu, Jr., ex officio, LL.B. 1951, LL.M. 1952; 1627 K Street, N.W., Washington, D.C.



### THE LIBRARY SCIENCE ALUMNI ASSOCIATION

The Library Science Alumni Association was organized in 1932 by graduates of the Division of Library Science and became an affiliate of the General Alumni Association in 1935. It was established to foster a closer relationship between the Faculty and graduates and to further the interests of the Division of Library Science and of the University as a whole.

#### OFFICERS OF THE ASSOCIATION FOR 1966-67

- President.*—John S. Moats, A.B. in L.S. 1932; 5100 Dorset Avenue, Washington, D.C.  
*Vice President.*—Susan O. Futterer, A.B. in L.S. 1936; 1701 16th Street, N.W., Washington, D.C.  
*Secretary.*—Marguerite Rebecca Quattlebaum, A.B. 1939; 1022 26th Road S., Arlington, Va.  
*Treasurer.*—Elinor Elizabeth Dunnigan, A.B. in L.S. 1930, A.M. 1932; 5205 Colorado Avenue, N.W., Washington, D.C.

### THE ENGINEER ALUMNI ASSOCIATION OF THE GEORGE WASHINGTON UNIVERSITY, INC.

The Engineer Alumni Association was organized in 1936 and was incorporated in 1962. It has worked closely with the General Alumni Association since its organization. Its objects are to unite the graduates and Faculty of the School in closer fellowship, to promote the general welfare of the School and the University at large, to foster activities of the engineering organizations recognized by the University, and to advance the profession of engineering in general.

#### OFFICERS OF THE ASSOCIATION FOR 1967-68

- President.*—Edward A. Wareham III, B.E.E. 1953; 5004 Rodman Road, Washington, D.C.  
*Vice President.*—William H. Holt, B.S. in Engr. 1957, LL.B. 1961, 4300 23d Road N., Arlington, Va.  
*Secretary.*—Raymond P. Morales, B.S. (E.E.) 1965; 7300 Churchill Road, McLean, Va.  
*Treasurer.*—Harvey J. Flatt, B.E.E. 1963; 10636 Montrose Road, Bethesda, Md.

### THE GEORGE WASHINGTON UNIVERSITY NURSES ASSOCIATION

The George Washington University Nurses Association was organized in 1914. In 1936, this organization was made an integral part of the General Alumni Association, and graduates of the School of Nursing were accorded associated membership. The objects of the Association are to hold in unison the graduates of The George Washington University Hospital School for Nurses, to care for its sick members, and to promote the advance of nursing in the interest of The George Washington University Hospital.

#### OFFICERS OF THE ASSOCIATION FOR 1966-67

- President.*—Katherine M. del Valle, 2223 H Street, N.W., Washington, D.C.  
*Secretary.*—Junita Love, 4815 Battery Lane, Bethesda, Md.  
*Treasurer.*—Alma Binks, 5101 Sargent Road, N.E., Washington, D.C.

### WOMEN'S PHYSICAL EDUCATION ALUMNAE ASSOCIATION

The purpose of this organization is to foster and promote the teaching profession in the fields of Physical Education, Health, and Recreation. Its functions are (1) to attract students to the profession who show evidence of outstanding teaching capability, (2) to offer professional guidance to members in this field of work, (3) to render service to the community, and (4) to render service to the University.



## OFFICERS OF THE ASSOCIATION FOR 1966-67

*President.*—Jane S. Bernot, B.S. in P.E. 1945; 3720 Northampton Street, N.W., Washington, D.C.

*Secretary.*—Shielamarie M. Schiffmann, B.S. in P.E. 1960, A.M. in Ed. 1966; 2806 Pine Spring Road, Falls Church, Va.

*Treasurer.*—Camille J. Craig, B.S. in P.E. 1942, A.M. in Ed. 1952; 1326 30th Street, N.W., Washington, D.C.

## REGIONAL ALUMNI CLUBS

Regional alumni clubs sponsored by the General Alumni Association are active in a number of areas. Information about the officers and activities of these clubs may be obtained from the Alumni Office of the University.

## THE LETTERMEN CLUB

The membership of this organization shall consist of those men who, for participation in a sport at The George Washington University, have been awarded varsity letters or freshman numerals, who are no longer undergraduate students of the University; and those men who, for managing a freshman or varsity sport, received letters or numerals.

The objectives of the club are to (1) bring together on a social level former lettermen of all sports, (2) renew acquaintances and promote fellowship, (3) encourage higher ideals of intercollegiate athletics at the University, and (4) assist the University in matters pertaining to athletics when requested.

## OFFICERS FOR 1967-68

*President.*—Charles B. Reed, B.S. in P.E. 1963, A.M. in Ed. 1965; 1563A N. Van Dorn Street, Alexandria, Va.

*Vice President.*—Joseph J. Bernot, B.S. in Ed. 1950, A.M. in Ed. 1953; 3720 Northampton Street, N.W., Washington, D.C.

*Treasurer.*—Stephen J. Korceck, B.S. in P.E. 1954, A.M. in Ed. 1966; 2703 Upshur Street, Mount Rainier, Md.

*Secretary.*—J. Dallas Shirley, B.S. in P.E. 1936, A.M. in Ed. 1945; 1200 N. Nash Street, Arlington, Va.

## THE COLUMBIAN WOMEN

The objectives of this organization are (1) the promotion of acquaintanceship among its members, (2) the advancement of women by the founding of scholarships in the various departments of the University, and (3) the promotion of the interests of the University.

## MEMBERSHIP

The following persons shall be eligible for active membership: (1) any woman who is currently registered or has been previously registered as a student in The George Washington University; (2) any woman member of the Faculties or Board of Trustees, any woman on the administrative staff; the wife of any member of the Faculties, Board of Trustees, or the administrative staff; and (3) any woman recipient of an honorary degree from the University.

## OFFICERS FOR 1967-68

*President.*—Sue Burnett Panzer (Mrs. Irving R. M.), A.B. 1941; 2500 Que Street, N.W., Washington, D.C.

*First Vice President.*—Hazel Hanback (Mrs. William B.), A.B. 1940; 2152 F Street, N.W., Washington, D.C.



*Second Vice President.*—Tahmineh I. Parsons (Mrs. George), B.S. in H.E. 1955, A.M. in Ed. 1958; 2101 Yorktown Road, N.W., Washington, D.C.

*Recording Secretary.*—Virginia H. Teller, A.M. in Ed. 1964; 4101 Legation Street, N.W., Washington, D.C.

*Corresponding Secretary.*—Helen C. Weiland; 1201 16th Street, N.W., Washington, D.C.

*Assistant Corresponding Secretary.*—Mabel O. Traiser, A.B. 1952; 4532 47th Street, N.W., Washington, D.C.

*Treasurer.*—Ruth Cammack, A.B. 1948; 3806 Davis Place, N.W., Washington, D.C.

*Assistant Treasurer.*—Gladys Leech Fishel, A.B. 1954, A.M. 1956, LL.B. 1965; 3819 N. Albemarle Street, Arlington, Va.

*Historian.*—Margaret Murray, A.B. 1930, A.M. 1941; 5629 Lamar Road, N.W., Washington, D.C.

*Past President.*—Elma Williams, A.B. 1954; 3016 Tilden Street, N.W., Washington, D.C.

## THE WOMEN'S BOARD OF THE GEORGE WASHINGTON UNIVERSITY HOSPITAL

The object of this organization is to aid in every way the interests and advancement of The George Washington University Hospital. Meetings are held on the first Wednesday of each month, October to June, inclusive. Inquiries regarding membership should be addressed to the Corresponding Secretary, The George Washington University, Washington, D.C., 20006.

### OFFICERS FOR 1967-68

*Honorary President.*—Mrs. Cloyd H. Marvin

*President.*—Mrs. James J. Feffer

*First Vice President.*—Mrs. Alvin E. Parrish

*Second Vice President.*—Mrs. Reginald H. Pledger

*Third Vice President.*—Mrs. Jed W. Pearson

*Recording Secretary.*—Mrs. Robert S. Wild

*Corresponding Secretary.*—Mrs. Charles S. Coakley

*Assistant Corresponding Secretary.*—Mrs. Benjamin Manchester

*Treasurer.*—Mrs. J. Blaine Harrell

*Assistant Treasurer.*—Mrs. Charles R.L. Halley

#### *Directors:*

Mrs. Samuel M. Burgess II

Mrs. Francis L. Kiep

Mrs. Martin A. Mason

Mrs. Joseph H. Roe



## STATISTICAL RECORD

### SUMMARY OF REGISTRATION 1966-67

#### COLUMBIAN COLLEGE OF ARTS AND SCIENCES

	FALL SEMESTER			SPRING SEMESTER		
	Men	Women	Total	Men	Women	Total
Lower Division . . . . .	1,328	1,402	2,730	1,227	1,289	2,516
Upper Division . . . . .	575	851	1,426	555	806	1,361
Graduate Division . . . . .	365	342	707	337	317	654
Unclassified . . . . .	1	—	1	1	—	1
Total . . . . .	2,269	2,595	4,864	2,120	2,412	4,532

#### GRADUATE COUNCIL

Doctor of Philosophy . . .	318	124	442	324	127	451
Unclassified . . . . .	1	2	3	1	1	2
Total . . . . .	319	126	445	325	128	453

#### SCHOOL OF MEDICINE

Doctor of Medicine . . . .	373	32	405	369	32	401
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#### NATIONAL LAW CENTER

Bachelor of Laws . . . . .	1,122	88	1,210	1,006	81	1,087
Master's and Doctor's Degree . . . . .	70	1	71	85	1	86
Unclassified . . . . .	101	11	112	86	7	93
Total . . . . .	1,293	100	1,393	1,177	89	1,266



## SCHOOL OF ENGINEERING AND APPLIED SCIENCE

Undergraduate . . . . .	340	8	348	292	5	297
Graduate . . . . .	894	7	901	799	5	804
Unclassified . . . . .	39	—	39	45	—	45
Total . . . . .	1,273	15	1,288	1,136	10	1,146

## SCHOOL OF EDUCATION

Undergraduate . . . . .	34	212	246	27	199	226
Graduate . . . . .	342	385	727	344	391	735
Unclassified . . . . .	26	37	63	18	31	49
Total . . . . .	402	634	1,036	389	621	1,010

## SCHOOL OF GOVERNMENT AND BUSINESS ADMINISTRATION

Undergraduate . . . . .	147	33	180	141	24	165
Graduate . . . . .	882	71	953	831	64	895
Unclassified . . . . .	24	—	24	25	—	25
Total . . . . .	1,053	104	1,157	997	88	1,085

## SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS

Undergraduate . . . . .	95	77	172	86	71	157
Graduate . . . . .	130	48	178	114	39	153
Total . . . . .	225	125	350	200	110	310

## COLLEGE OF GENERAL STUDIES

Undergraduate . . . . .	56	26	82	64	23	87
Graduate . . . . .	43	3	46	29	2	31
Unclassified . . . . .	12	4	16	9	2	11
Total . . . . .	111	33	144	102	27	129

## DIVISION OF UNIVERSITY STUDENTS

University students . . . .	968	789	1,757	852	735	1,587
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## SUMMARY

Undergraduate . . . . .	2,575	2,609	5,184	2,392	2,417	4,809
Graduate . . . . .	4,539	1,101	5,640	4,238	1,059	5,297
Unclassified . . . . .	1,172	843	2,015	1,037	776	1,813
Total . . . . .	8,286	4,553	12,839	7,667	4,252	11,919

## SUMMER SESSIONS REGISTRATION 1966

Men . . . . .	2,850
Women . . . . .	2,071
Total . . . . .	4,921



## COLLEGE OF GENERAL STUDIES OFF-CAMPUS STUDY

	FALL SEMESTER			SPRING SEMESTER		
	Men	Women	Total	Men	Women	Total
Degree Candidates						
Undergraduate . . . . .	299	49	348	336	55	391
Graduate . . . . .	895	41	936	1,042	41	1,083
Total . . . . .	1,194	90	1,284	1,378	96	1,474
Nondegree Status . . . . .	2,255	563	2,818	1,860	448	2,308
Total . . . . .	3,449	653	4,102	3,238	544	3,782

## SUMMER SESSIONS 1966

Degree Candidates			
Undergraduate . . . . .	166	24	190
Graduate . . . . .	1,069	13	1,082
Total . . . . .	1,235	37	1,272
Nondegree Status . . . . .	542	176	718
Total . . . . .	1,777	213	1,990

## GEOGRAPHICAL DISTRIBUTION OF STUDENTS

## UNITED STATES, TERRITORIES, AND POSSESSIONS

	FALL SPRING			FALL SPRING	
	FALL	SPRING		FALL	SPRING
Alabama . . . . .	37	34	Nebraska . . . . .	22	21
Alaska . . . . .	12	7	Nevada . . . . .	11	10
Arizona . . . . .	23	19	New Hampshire . . . . .	19	18
Arkansas . . . . .	24	18	New Jersey . . . . .	683	656
California . . . . .	245	231	New Mexico . . . . .	19	16
Colorado . . . . .	37	34	New York . . . . .	1,311	1,229
Connecticut . . . . .	296	275	North Carolina . . . . .	63	58
Delaware . . . . .	47	39	North Dakota . . . . .	12	9
District of Columbia . . . . .	1,975	1,822	Ohio . . . . .	218	204
Florida . . . . .	166	156	Oklahoma . . . . .	36	35
Georgia . . . . .	45	46	Oregon . . . . .	24	20
Hawaii . . . . .	29	29	Pennsylvania . . . . .	623	567
Idaho . . . . .	33	30	Rhode Island . . . . .	61	56
Illinois . . . . .	198	192	South Carolina . . . . .	36	36
Indiana . . . . .	62	55	South Dakota . . . . .	18	17
Iowa . . . . .	30	24	Tennessee . . . . .	35	29
Kansas . . . . .	35	32	Texas . . . . .	107	107
Kentucky . . . . .	32	29	Utah . . . . .	58	55
Louisiana . . . . .	23	26	Vermont . . . . .	15	17
Maine . . . . .	29	26	Virginia . . . . .	2,649	2,369
Maryland . . . . .	2,262	2,136	Washington . . . . .	59	51
Massachusetts . . . . .	277	251	West Virginia . . . . .	46	41
Michigan . . . . .	94	93	Wisconsin . . . . .	34	30
Minnesota . . . . .	43	42	Wyoming . . . . .	15	13
Mississippi . . . . .	16	14	Guam . . . . .	2	1
Missouri . . . . .	70	68	Panama Canal Zone . . . . .	2	2
Montana . . . . .	28	18	Puerto Rico . . . . .	12	14
			Virgin Islands . . . . .	5	4



## FOREIGN COUNTRIES

	FALL	SPRING		FALL	SPRING
Afghanistan . . . . .	1	1	Jamaica . . . . .	3	1
Argentina . . . . .	5	3	Japan . . . . .	10	11
Australia . . . . .	5	3	Jordan . . . . .	1	1
Austria . . . . .	—	1	Kenya . . . . .	2	2
Belgium . . . . .	5	5	Korea . . . . .	22	22
Bolivia . . . . .	1	5	Lebanon . . . . .	1	3
Brazil . . . . .	5	6	Liberia . . . . .	3	1
British Guiana . . . . .	—	1	Libya . . . . .	3	1
British West Indies . . . . .	1	1	Malagasy Republic . . . . .	1	1
Burma . . . . .	3	2	Malaysia . . . . .	3	4
Cameroun . . . . .	1	—	Mexico . . . . .	4	8
Canada . . . . .	13	12	Morocco . . . . .	1	2
Chile . . . . .	—	2	Netherlands . . . . .	2	5
China . . . . .	10	6	New Zealand . . . . .	2	2
Colombia . . . . .	5	5	Nicaragua . . . . .	1	1
Congo, Republic of . . . . .	1	1	Nigeria . . . . .	4	4
Costa Rica . . . . .	3	2	Okinawa . . . . .	1	1
Cuba . . . . .	18	23	Pakistan . . . . .	9	6
Cyprus . . . . .	—	1	Panama . . . . .	7	6
Denmark . . . . .	2	3	Peru . . . . .	4	5
Dominican Republic . . . . .	2	1	Philippines, Republic of . . . . .	12	14
Ecuador . . . . .	1	3	Portugal . . . . .	1	2
Egypt . . . . .	2	3	Rhodesia . . . . .	1	1
El Salvador . . . . .	5	2	Saudi Arabia . . . . .	4	3
England . . . . .	13	20	Scotland . . . . .	—	1
Ethiopia . . . . .	1	1	Sierra Leone . . . . .	3	3
Finland . . . . .	—	1	South Africa . . . . .	1	2
Formosa . . . . .	1	2	Spain . . . . .	2	3
France . . . . .	8	13	Sweden . . . . .	—	1
Germany . . . . .	9	17	Switzerland . . . . .	2	1
Ghana . . . . .	1	1	Syria . . . . .	2	3
Greece . . . . .	11	11	Thailand . . . . .	8	11
Guatemala . . . . .	1	—	Trinidad . . . . .	2	—
Guinea, Republic of . . . . .	1	1	Turkey . . . . .	8	9
Haiti . . . . .	2	2	United Arab Republic . . . . .	8	8
Honduras . . . . .	1	1	Uruguay . . . . .	2	4
Hong Kong . . . . .	3	2	Venezuela . . . . .	5	4
Hungary . . . . .	—	1	Viet Nam . . . . .	8	12
India . . . . .	32	35	West Indies Federation . . . . .	—	1
Indonesia . . . . .	2	3	Yugoslavia . . . . .	—	1
Iran . . . . .	16	11	Stateless . . . . .	1	3
Iraq . . . . .	8	9			
Israel . . . . .	11	9			
Italy . . . . .	3	4			

## SUMMARY OF DEGREES CONFERRED 1966-67

	SUMMER	FEB.	JUNE	TOTAL
Advanced Professional Certificate (Education) . . . . .	—	1	2	3
Associate in Arts (College of General Studies) . . . . .	7	2	2	11



	SUMMER	FEB.	JUNE	TOTAL
Associate in Arts (Columbian College of Arts and Sciences) . . . . .	—	4	7	11
Bachelor of Arts (College of General Studies) . . .	31	25	42	98
Bachelor of Arts (Columbian College of Arts and Sciences) . . . . .	98	107	377	582
Bachelor of Arts (School of Public and International Affairs) . . . . .	15	5	52	72
Bachelor of Arts in Education . . . . .	20	27	67	114
Bachelor of Business Administration (College of General Studies) . . . . .	2	9	3	14
Bachelor of Business Administration (School of Government and Business Administration) . . .	11	26	46	83
Bachelor of Electrical Engineering . . . . .	1	—	—	1
Bachelor of Laws . . . . .	62	80	235	377
Bachelor of Science (Columbian College of Arts and Sciences) . . . . .	10	11	31	52
Bachelor of Science (Civil Engineering) . . . . .	1	2	7	10
Bachelor of Science (Communications) . . . . .	—	—	5	5
Bachelor of Science (Electrical Engineering) . . . . .	—	4	8	12
Bachelor of Science (Electronics) . . . . .	1	2	11	14
Bachelor of Science (Engineering Science) . . . . .	—	—	1	1
Bachelor of Science (Machine Computers) . . . . .	—	2	2	4
Bachelor of Science (Measurement Science) . . . . .	1	—	—	1
Bachelor of Science (Mechanical Engineering) . . .	1	—	3	4
Bachelor of Science (Theoretical and Applied Mechanics) . . . . .	—	2	—	2
Bachelor of Science in Engineering . . . . .	—	2	—	2
Bachelor of Science in General Studies . . . . .	—	3	6	9
Bachelor of Science in Geodetic and Cartographic Science . . . . .	—	—	1	1
Bachelor of Science in Medical Technology . . . . .	2	2	—	4
Bachelor of Science in Physical Education . . . . .	2	2	11	15
Doctor of Business Administration . . . . .	—	4	—	4
Doctor of Education . . . . .	1	2	13	16
Doctor of Medicine . . . . .	1	—	95	96
Doctor of Philosophy . . . . .	—	20	19	39
Doctor of Public Administration . . . . .	—	—	1	1
Doctor of Science . . . . .	1	4	3	8
Education Specialist . . . . .	1	3	4	8
Master of Arts (College of General Studies) . . . .	5	7	10	22
Master of Arts (Columbian College of Arts and Sciences) . . . . .	30	18	35	83
Master of Arts (School of Public and International Affairs) . . . . .	13	15	12	40
Master of Arts in Education . . . . .	80	39	100	219
Master of Arts in Government . . . . .	8	12	8	28
Master of Arts in International Affairs . . . . .	9	13	6	28
Master of Arts in Teaching . . . . .	2	—	31	33
Master of Business Administration (College of General Studies) . . . . .	1	—	2	3
Master of Business Administration (School of Government and Business Administration) . . .	45	37	118	200
Master of Comparative Law . . . . .	2	—	2	4
Master of Comparative Law (American Practice) . . . . .	2	2	1	5
Master of Engineering Administration . . . . .	5	35	33	73



	SUMMER	FEB.	JUNE	TOTAL
Master of Fine Arts . . . . .	1	4	4	9
Master of Laws . . . . .	3	9	22	34
Master of Public Administration (College of General Studies) . . . . .	—	—	1	1
Master of Public Administration (School of Gov- ernment and Business Administration) . . . . .	—	3	5	8
Master of Science (Columbian College of Arts and Sciences) . . . . .	8	14	9	31
Master of Science (School of Engineering and Applied Science) . . . . .	3	9	23	35
Master of Science in Business Administration . . .	164	16	12	192
Master of Science in Engineering . . . . .	1	16	7	24
Master of Science in Financial Management . . . .	11	12	17	40
Master of Science in Governmental Administration . . . . .	3	6	10	19
Master of Science in International Affairs . . . . .	244	10	27	281
Master of Science in Personnel Administration . .	72	64	72	208
Master of Science in Public Administration . . . .	59	1	15	75
Total . . . . .	1,040	693	1,636	3,369

## TEACHING STAFF 1966-67

Professors Emeriti . . . . .	63
Professors . . . . .	199
Research Professors . . . . .	7
Adjunct Professors . . . . .	4
Visiting Professors . . . . .	11
Professorial Lecturers . . . . .	119
Clinical Professors . . . . .	50
Associate Professors . . . . .	155
Associate Research Professors . . . . .	9
Visiting Associate Professors . . . . .	4
Associate Professorial Lecturers . . . . .	90
Associate Clinical Professors . . . . .	115
Assistant Professors . . . . .	167
Assistant Research Professors . . . . .	10
Visiting Assistant Professors . . . . .	1
Assistant Professorial Lecturers . . . . .	117
Assistant Clinical Professors . . . . .	267
Instructors . . . . .	62
Clinical Instructors . . . . .	197
Lecturers . . . . .	88
Adjunct Lecturers . . . . .	10
Special Lecturers . . . . .	21
Studio Lecturers . . . . .	17
Assistants in the School of Medicine . . . . .	95
Fellows in the School of Medicine . . . . .	59
Fellows (nonmedical) . . . . .	24
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Total . . . . .	2,087



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